

November 1992

The National Locksmith®



Locksmith Tools Issue

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Of course, you'll want to save these codes for future reference. You know they'll be handy.



On The Cover

(Clockwise from bottom left) ESP Lock Corp.; Pro-Lok; High Tech Tools; HPC, Inc.; and Slide Lock Tool Company. Products from these companies and many others are highlighted in our special 'Locksmith Tools' Product Review, beginning on page 34. Don't forget to send for free information about all products in this issue (ads and product review sections) by using the supplied Rapid Reply Card.

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Commentary

A Locksmith Joins Our Staff!

This month I have some exiting new information to share with you. We have hired two new people here at *The National Locksmith*. Chrisann Christensen is our new administrative assistant. She will be helping to lift the paperwork burden off the shoulders of Advertising Sales Manager Tom Mlodoich and Sales Associate Debbie Schertzing. Welcome Chrisann!

Our second new addition is Tom Seroogy. Tom is a veteran locksmith from our hometown of Streamwood, IL. His business, American Locksmith & Alarm, specialized in automotive locksmithing and access control. Tom's position will be that of Managing Editor. He will help insure that we are always providing you with the hottest, most up to date articles in the industry.

Tom is very interested in foreign and domestic autos because he believes that this represents a profitable service arena for the locksmith. Just as important, however, Tom thinks that electronic access control systems are going to offer future locksmiths the most important profit centers. A member of both the GCLA and ALOA, Tom also studied journalism in college.

"Today's locksmith must offer a 'total security service' to the customer," says Tom. "In order to provide that total service, the locksmith needs information about products and techniques which will allow him to prosper through the next century." He concludes, "*The National Locksmith* will see to it that you receive the information and articles you need to be the most informed security professional ever. We intend to aid you in offering security to your customers, and we will help you increase your own profitability."

Stay tuned to *The National Locksmith* over the next few months. I know that you will be seeing some exciting new information from our Managing Editor. In the meantime, if you have any questions or comments for Tom or me, please pick up the phone and give us a call. Dialing (708) 837-2044 puts you right in touch with the magazine where locksmiths come first!

Did you know that today is the information age? They say that in the last fifteen years, more information has been published than in the entire previous history of man?

How has that affected the security profession? It has impacted us as much as any other I guess you could say. Simply look at the huge variety of catalogs and information sheets clogging up your counters. In the modern day, you have more choices than any locksmiths have ever had.

In the olden days, if a locksmith wanted a tool or a pick, he had to make it. Today you can pick up the phone, or maybe even access your distributor's inventory via your computer. As the nineties advance into the 21st century, this explosion of information will continue.

I believe that for many years, there will continue to be an important need for physical security and service of same. However! It is undeniable that our future hold high tech solutions to old fashioned problems. In the near future, we intend to show you how you can prepare for the coming of the Age of Electronics. Looking into the crystal ball, I see a computer on every locksmith bench, and I see a professional who can install a card swipe system faster than he can pin a cylinder.

What do *you* see in the future?



Marc Goldberg
Editor/Publisher

November 1992 5

Letters

Comments, Suggestions and Criticisms

The National Locksmith is interested in your view. We do reserve the right to edit for clarity and length. Please address your comments, praise, or criticism to Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107. All letters to the editor must be signed.

In Memorium



Harry J. Stoa, President of Boston Lock & Safe Company suddenly passed away on September 19, 1992 at age 63. He spent over 50 years in the lock and safe business which was handed down to him from his father.

As a young man, Harry aspired to be an entertainer, moonlighting as an escape artist inspired by his idol the Great Harry Houdini. After some unfortunate experiences, he returned to his family's traditional livelihood while furthering his education at Boston University and Wentworth Institute.

He instilled in his company a sense of pride and the will to always strive

for perfection. He never carried a grudge and started each day with a clean slate. He was a good judge of character, an extremely tough negotiator with a wry sense of humor when necessary.

Harry was a generous man who did a lot for his community and for his church. Being of Albanian descent he most recently was involved in humanitarian aid to Albania, a Balkan country under Communist rule for over 50 years and one of the poorest countries on earth.

He was a prolific writer and poet and wrote many articles for Vatra and Dielli, two of the largest Albanian newspapers in America. He also contributed many articles to New England newspaper and security magazines as well as the national lock and safe publications. Besides a businessman and locksmith, Harry was also an historian of the trade.

Harry was treasurer and past president of Pan American Federation of America Vatra, Albanian Orthodox Cathedral of St. George of Boston, United Lodge AF & AM and the Boston Y.M.C. Union.

Harry was a good man...tough when he had to be...but mainly kind, generous and honorable. He will be missed by his family, his employees and the locksmith and safe community worldwide.

An Open Letter To Bill Reed

Dear Bill:

I hope you are well. Received your letter announcing the new locksmithing magazine and association. It is customary upon the receipt of such a letter to wish the newly-launched craft Godspeed. Forgive me if I take another direction. I mean you no harm.

Your contribution to locksmithing is abiding and secure. I believe you when you say the advancement of our industry is your passion. For these very reasons I ask you to reconsider the venture.

Last year I decided to let go of one industry involvement to make a deeper commitment to another. My decision to place all my eggs in the ALOA basket had to do with my personal experience of community, and the appreciation of my limits. That was my decision. But in making it, I concluded that the industry was suffering from some of the same things that were hurting me, namely, being pulled in too many directions, too many tasks, too few resources, and insufficient time.

You would doubtless agree that we can do more in community than we can do alone. But there are already well-formed communities, and communities in process of formation

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Technitips

Helpful Hints from Fellow Locksmiths



Send me your Technitips. Who knows, you may be our next winner! c/o The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

by Robert Sieveking

November's Best Tip

Ignition lock removal on the 1986 and newer Ford 10 wafer sidebar system can be a problem. Next time a Ford column is brought into the shop, that needs a key made for the lock cylinder, try this Technitip. This method works much faster and cleaner than drilling from the face of the lock, to drill through the sidebar.

First, carefully pry off the lock bezel, or turning ears. You have to do this, as the plastic column shroud can not be lifted over the lock bezel. Remove the shroud, to expose the lock casting. Measure from the face of the lock cylinder, back approximately 3/4", in line with the sidebar, and mark the

casting. Mark the location of the "center" of the sidebar, and center-punch the casting. Use a 1/16" drill bit to penetrate the casting and the lock shell. The head of the cylinder will jump as you penetrate the sidebar compartment and touch the sidebar. Do not drill through the sidebar. Remove the drill, and insert a piece of spring wire into the hole,

to put pressure on the sidebar. Rake the wafers, as you apply pressure to the sidebar. You will feel the sidebar drop in, as the lock is picked. Rotate the cylinder plug to the "on/run" position, and depress the cylinder retainer to remove the lock. Code a new 10 wafer cylinder to match the old one, or simply replace the old one, which ever suits your purpose.

These Prizes Awarded Each Month!

All-Lock A-7000 VATS Decoder
HPC Pistolpick
Silca Rubberhead Keyblanks (100 blanks)
ESP PR-13 Professional Lock Pick Set
Sieveking Products EZ-Pull GM Wheel Puller

Submit your tip and win!

Continued on page 10

How To Enter

All you need to do to enter is submit a tip, covering any aspect of locksmithing to The National Locksmith. Certainly, you have a favorite way of doing things that you'd like to share with other locksmiths. Why not write it down and submit it to: Robert Sieveking, Technitips' Editor, The National Locksmith, 1533 Burgundy Parkway, Streamwood, IL 60107.

Tips submitted to other industry publications will **not** be eligible! So get busy and send in your tips today. You may win cash merchandise, or even one of many key machines or code book sets! At the end of the year, we choose the winners of the listed prizes.

Last year dozens of people walked off with money and prizes. Wouldn't you like to be one of the prize winners for 1992? Enter today! It's a lot easier than you think!

Every Tip Wins 'Locksmith Bucks!'

Yes, every tip published wins a prize. But remember, you must submit your tip to *The National Locksmith* exclusively. Each and every tip published in Technitips wins you \$25.00 in Locksmith Bucks! Use this spendable cash toward the purchase of any books or merchandise from *The National Locksmith*. You also receive a Bonded Locksmith bumper sticker and decal. Plus you are now eligible for the really big prizes!

Best Tip of the month prizes!

If your tip is chosen as the best tip of the month, you will win \$50.00 in cash as well as \$35.00 in Locksmith Bucks! Plus you will receive a quartz Locksmith watch, a Bonded Locksmith bumper sticker, decal and a Locksmith Cap. Plus, you may win one of the annual prizes.

Continued from page 8

Once mastered, you will find this method faster and cleaner than drilling through the face of the lock. Good Luck.

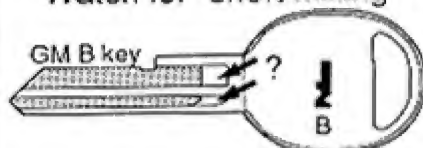
John Mattei
California

All-Lock VATS Decoder Winner

Recently I had a problem with a key to a GM car door. I was progressing a trunk and door key from the glove box lock. After determining the four cuts, from the glove box lock, I began to progress the remaining cuts, while trying the key in the door lock. I found that, after progressing through all the possible cuts, I still did not have a working key.

The problem turned out to be the length of the milling on the key blade. The aftermarket keys had not been milled far enough to allow the blade to completely enter the keyway. In illustration one, you see a GM "B" keyway blank. Notice the side milling of the key. The milling should have extended farther up the blade, but stopped short. What happened to the last 1/4" of the milling? Nobody

Watch for "short milling"



Tab in the shutter assembly can obstruct the key

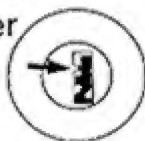


Illustration 1

seems to know, but when you insert the key into the door or trunk lock of a GM auto, the tab in the dust shutter binds on the key, preventing it from completely entering the keyway. The newer GM autos do not have the tab, in the dust shutter, which is probably the reason for the milling change, but some older autos will still be around awhile. If you experience this problem, you can either use a different manufacturer's blank or file down the tab with a jewelers file, to remove the obstruction.

Don't judge your key a "mis-cut", until you determine "why" it didn't work. This Technitip is a simple solution to a pretty sneaky problem.

Clarence Martin
Georgia

HPC Pistolpick Winner

This Technitip is for a solution to the problem of installing a deadbolt in a commercial hollow metal door, when a Squeeze-Play door mortiser cannot be used. Some heavy duty commercial doors will have a metal channel, which reinforces the edge of the door. It can be as much as 1/8" thick. This material is too heavy to be formed by a Squeeze-Play, to accept a square face bolt, and to cut a square mortise into the edge of the door, would seriously weaken it. The problem is that you don't know how heavy the door edge will be, until you drill the door, otherwise a rim lock might have been an easier solution.

To complete the installation, it becomes necessary to use a drive-in bolt. The drive-in bolt, was designed primarily for wood door applications, but with a little ingenuity, it can be used in a hollow metal door without the usual loosening, and sloppy fit.

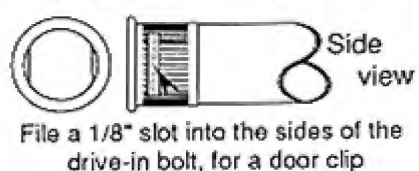
To modify the bolt, use the side of a small mill file to make a slot in the case of the drive-in bolt, as you see in



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Drive-in bolt for a hollow steel door



File a 1/8" slot into the sides of the drive-in bolt, for a door clip

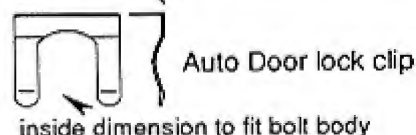


Illustration 2

illustration two. The slot is approximately 1/8" wide, and 1/8" from the face of the drive in cap. The depth of the slot is as necessary to accommodate the lock clip. You may decide to file the inside of the lock clip, to fit the bolt. Insert the bolt into the prepared edge hole, in the hollow steel door, and install the clip from the top. The bolt will be held in place, and will

not loosen in normal use. Be careful to accurately drill the side holes, in alignment with the edge hole.

This Tip will not work with the center seam type doors.

Bruno Golowski

New Jersey

Silca Keyblanks Winner

My Technitip is how to make a lifting fork, to open vertical button style auto locks, from a tool you may already possess, but probably are not using. The Steck tool #32560 was designed to open the Safari vans with horizontal linkage, but I have found better ways, or rather easier to use tools, to be more effective. The old Steck tool was reshaped, as you see in illustration three, to make it better suited to engaging vertical button rods. The tip was twisted, to make the split end more horizontal, and the long shaft of the tool was reshaped to more of a Z shape.

To operate the tool, wedge the glass and insert the tool into the door cavity. Manipulate the fork over the vertical lock rod and twist the handle to bind the tool to the rod. Lift the handle to unlock the door. I have had good luck with this tool, when other

A new twist for an old tool

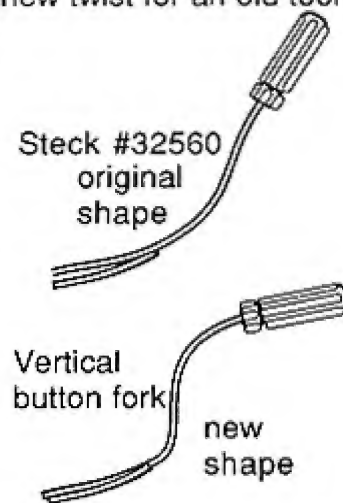


Illustration 3

tools have failed.

David Romans

Florida

ESP Pickset Winner

In Southern California, the Weslock 640 entry knob is a fairly common sight, on doors of apartments, condos, and homes. If you've ever had difficulty unlocking

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one of these lock sets by picking or impressing, this Tip may be interesting to you.

Take a 1/16" drill bit, and insert it into the keyway directly under the tumblers. (This is the center of the plug.) Use the top of the top of the first keyway ward as a guide. You may need to use a pick to lift the tumblers, as you insert the drill bit. After the bit has been fully inserted, chuck it into your cordless drill. (I prefer the variable speed.) Slowly apply pressure to the drill trigger, as you push the bit to the back of the keyway. The drill bit will bite into the tip of the cylinder

retaining screw, located at the rear of the lock plug, and unscrew it. When the screw is unscrewed completely, the drill chuck will jump up to the face of the cylinder suddenly. Remove the drill. The cylinder assembly will be free to be removed from the front of the knob. Remove it and unlock the lockset with a small screwdriver.

Make a key to the cylinder and reassemble the lockset. In most cases, this Tip can be done with no apparent damage to the lockset.

Jerry Hagan
California



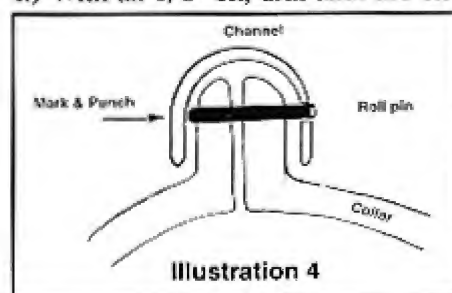
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E-Z Pull GM Wheel Puller Winner

This tip may help someone tackle a job previously turned away. I'm referring to servicing the ignition lock and key on GM autos with the Steadfast security collar installed. The collar, held in place by two channels bind the two piece collar together with four roll pins driven in the side of each channel.

To removed the roll pins, mark and center punch the roll pins on the blind side of the channel. (See illustration 4.) With an 1/8" bit, drill until the bit

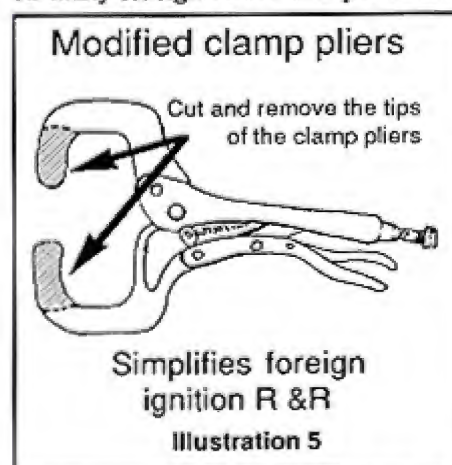


just breaks through the channel. Hitting the roll pin or the hardened collar quickly dulls the bit. The job may take several bits. After starting all 8 holes, finish drilling to expose the back of the roll pin. With a 3/32" drift punch, tap the pins out from the back even if the hole is off center, enough of the pin can be exposed to grip it with end cutters and rock the pin out.

The collar can be reassembled following this procedure but service kits are available to restore the integrity of the collar.

Leo Koulogianes
Tennessee

This Technitip is for a modified pair of clamping pliers, that I have made to simplify removing and replacing the ignition lock housings on many foreign autos. The pliers are

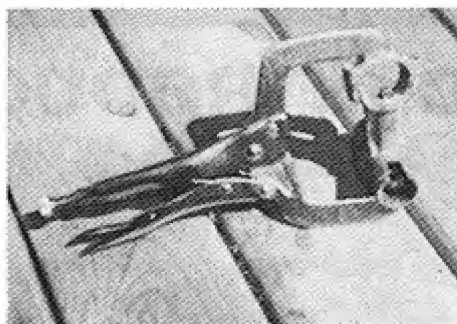


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modified, as you see in illustration five, to open wide enough to clamp the halves of the ignition together. When removing the housing, the clamp holds the halves together with enough force to loosen the shear head bolts in most cases. Then the halves are held together until all of the screws have been removed, making removal easier.

When replacing the housing, after servicing the lock cylinder, the halves can be positioned and clamped to allow the screws to be installed without difficulty. Photograph six



6. Modified clamp pliers

shows the modified clamp pliers, holding a Datsun ignition housing. The ends of the clamp pliers are cut to

form a "cup" shape, which cradles the housing without slipping off.

Casimier Cherry
Michigan

I haven't heard of anyone else having this problem, but I have had two situations which caused me much trouble getting the two 7mm screws out of the underside of the steering wheel. These screws fasten the horn pad and trim to the steering wheel. One situation had the steering wheel so tight to the dash, that I couldn't get my nut driver on the screws. The other time, the wheel was turned and locked, with the turn signal lever in line with the screw. Both times I tried to use a socket, but found the screws were recessed deep into a hole that was too small to accommodate the top of the socket.

Out of frustration, one night, I cut the end of my nut driver off, and clamped it in a pair of vise grip pliers. The problem was solved instantly. I removed the attachment screws and completed the job.

The next day, I was faced with repairing the damage to my nut driver. After a little thought, I fashioned the tool you see in illustration seven. I filed the cut ends to form a knee joint, in the center of the shaft. The tight fitting joint was



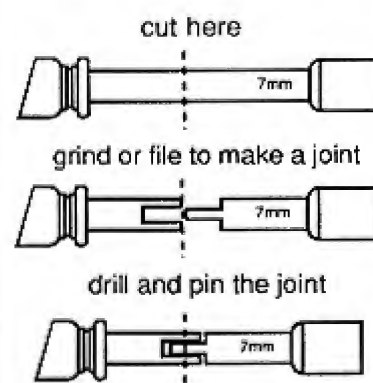
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Modified nut driver



simplifies horn pad removal

Illustration 7

then drilled and pinned in place with a single 3/32" drive pin. The nut driver can now be used straight, same as before. But, the next time the nut driver is too long to fit between the dash and the rear of the steering

Continued on page 104

Newsmakers

New Products and Industry News

KABA High Security Locks New Legic®

Legic is a breakthrough in identification systems in the security industry. For the first time, Legic provides a link between existing access control and locking systems and unified proximity access technology.

With only one identification medium, a card or a key, the Legic chip provides convenient noncontact access authorization for use in broad applications like door control, time and attendance management, timeclock, cashless transactions for food and gasoline, vending machines, or access entry to gates and garages from motor vehicles. It is the first system of its kind to combine analog, digital and EEPROM functions. The chip is inductively powered by a read/write unit without the need for any direct contact, and receives encoded data in the same way. No batteries are needed, thus contributing to the system's ecological compatibility. Because the

data is enciphered prior to transmission, a high degree of security is achieved.

The miniature chip and its mobility as a data medium have made it possible to integrate this technology in standardized ISO identification cards for the first time. Best of all, existing access control and identification systems now using magnetic strips and bar code readers can easily integrate the Legic system. In short, I.D. badges become instant "intelligent communication cards." Similarly, mechanical locking systems can be transformed into intelligent mechanical/electronic locking configurations with no sacrifice to the mechanical functions.

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EZ Vats Tool Eliminates Interrogators

The EZ VATS Tool eliminates the need to buy interrogators. A code-cut key in one end of this tool and a VATS blank in the other will determine the proper resistance. Then you merely duplicate the correct VATS blank off the code-cut key. Using this tool will assure no wasted VATS blanks, no disconnection of any wiring, no adaptors, and no need to buy any other type of keys or tools - just use



the standard GM and VATS blanks.

This simple VATS tool, available from Jon's lock and key in Sandy, UT, is priced so that your first job using the tool will more than pay for the cost of the tool.

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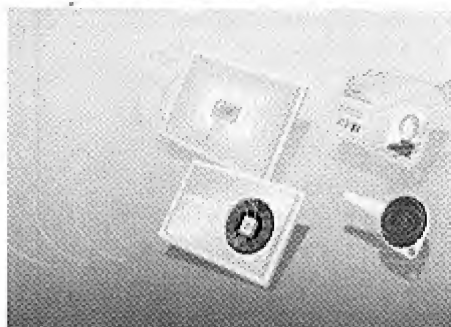
Almet's 400 Series Mortise Locks

Almet Inc., a Canada-based manufacturer of locks and door hardware, has introduced their new 4000 series mortise lock. The lock has reached a high level of acceptance in the New York market, where security is a "must."

The lock features a steel stamped case with a one inch throw deadbolt, as well as a 3/4" latch projection. The latch also is an anti-friction mechanism. U.L. listed to meet high density housing codes, is of high quality suitable for commercial use, but the 4000 series is also affordable for residential use.

Almet believes that they have introduced the lock of tomorrow...today.

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ASP - Your Auto Service Center for the World

'93 Master Catalog From Jensen Tools

A new 284-page Master Catalog from Jensen Tools introduces OSHA-required insulated tool sets (VDE certified), magnetic screwdrivers, and other hard-to-find tools for electrical and electronic installation and repair. Also included are wiring accessories, hand-held multimeters and other bench and field instruments, tool belts, kits cases and much more.



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Kwikset Enlarges Market With New Product Line

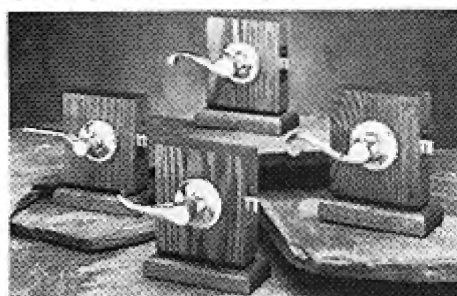
Kwikset's new marketing strategy is to add a whole new line of products.

A range of new door hardware, designated "TITAN," has been designed to spearhead Kwikset's drive into higher marketing ground.

TITAN offers a full line of products, including five styles of handlesets and four lever styles made of the solid, forged brass construction usually found only in designer lines costing far more.

The line also includes high-security deadbolts and larger knobs with anti-pry barriers.

The new Titan products have been rigorously tested to meet or exceed all American National Standards Institute (ANSI) Grade 2 requirements for



superior durability, quality, and security—the highest performance classification of residential hardware quality. And in the Kwikset tradition, all items in the line are exceptionally easy to install.

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Detex's Thriftlock™ Exit Control Lock

Detex corporation introduces the new ECL-8050 Thriftlock Alarmed Relatching Exit Control Lock. Designed to protect emergency exits from unauthorized use, the ECL-8050 combines Detex performance and durability with the reliability of microprocessor control. The AC-powered ECL-8050 allows instantaneous emergency egress from the inside while securing the exit door from intrusion from the outside. Unauthorized use of the door is announced with a high-decibel, directional alarm that is positioned behind a tamperproof cover.

Features include microprocessor control and battery back-up.

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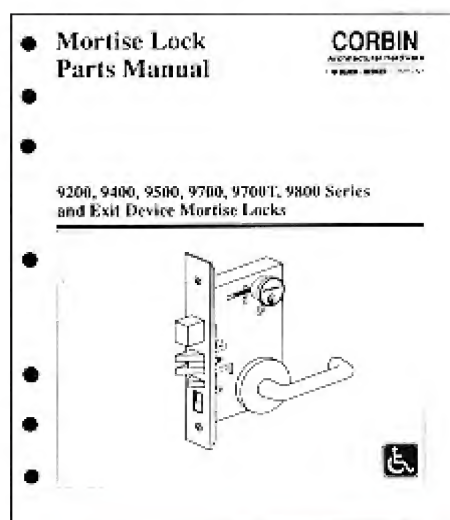
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in locking systems for security,
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Corbin Introduces New Parts Manual

Corbin architectural Hardware has introduced a new comprehensive mortise lockset parts manual as the latest addition to their series of updated parts manuals.

The new parts manual includes detailed illustrations of lockcase assemblies, trim, and optional accessories. It has been designed to simplify the identification and ordering of parts for distributors,



locksmiths and end users.

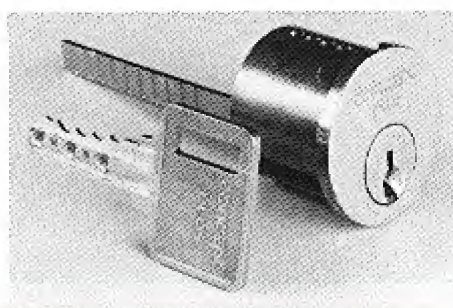
Corbin manufactures a full line of locksets, exit devices, door closers, and key systems. Parts manuals for the mortise lockset and other products are available through local Corbin distributors.

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B.B.W. Offers Concept Plus Cylinder

B.B.W. Distributors now offer the Concept Plus Cylinder. Shipped with a free display, it offers price flexibility with full markup at \$30 retail. This cylinder can be worked on with a regular pin kit and regular key machine. Job site key cutting is possible and the cylinder has advanced anti-drilling features.

This cylinder is not sold to



endorsers, distributors only. It offers high profitability because it is easy to upgrade a customer who is looking for a regular cylinder to choose this one.

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Arrow Announces Key Trek Software

Arrow's Keytrek is a software package for key systems and key control management. It provides the simple answer to both key system and key control management problems, and is designed to automate key records and accommodate numerous key systems all in one package.

Keytrek will support key systems for and by every major manufacturer of lock systems. In addition to managing these systems, Keytrek will prepare pinning schedules based on the manufacturer's specifications.

Arrow's new software package gives instant access to: Floor plan views, hardware schedules, keying schedules, key issuing and/or collecting, key pinning and management reports.

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Continued on page 20



HPC, Inc.
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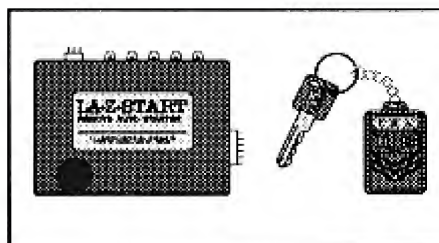
[Click here for more information](#)

Continued from page 18

C & A Control Systems' Remote Auto Starter

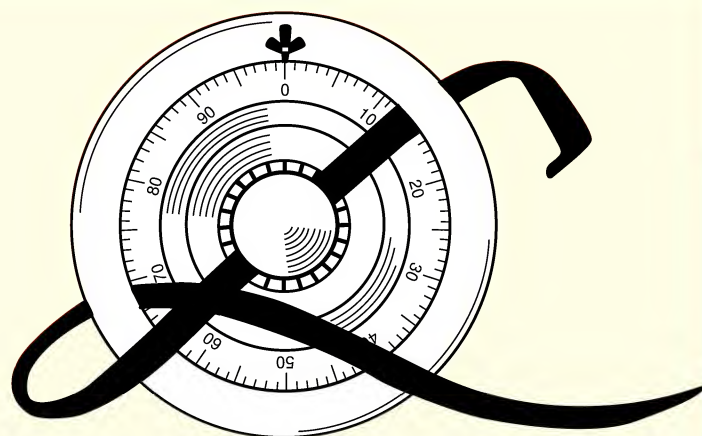
C & A Control Systems, Inc. has introduced a new remote auto starter which will be marketed as the La-Z-Start Limited (LZ350) Series. It is designed for those dealers who want an American made, low cost, quality system without unnecessary relays and circuitry. The LZ350 Limited can be used as an interface with most security systems or as a stand alone remote starter.

The LZ350 Limited series offers



the same 60-day money-back guarantee as C & A's more expensive models.

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U.S. SecuritySafe's Mini-Hopper Safes

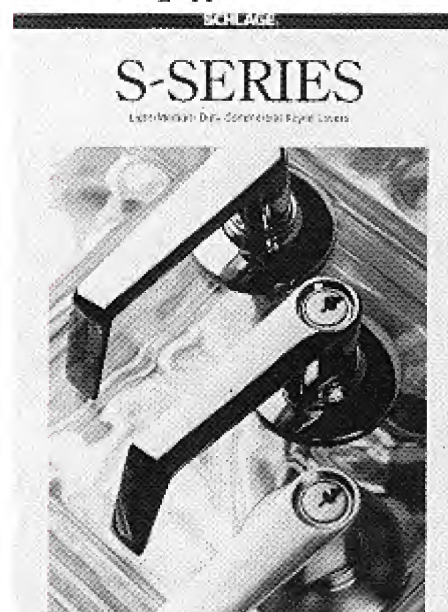
U.S. SecuritySafe Company is proud to announce their new envelope and cash drop hopper safes. Ideal for under counter and limited safe areas, this safe will meet the need for quick deposits and increase internal security. Uniform body construction, high tensile steel, relocker and dual anti-pilferage baffles make them ideal for small business owners. Shopping mall operations have been the highest recent users of this product.



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New S-Series Catalog Available From Schlage

This 9-page catalog from the Schlage Lock Company highlights complete performance specification details, lever designs and finishes, keying options and ordering information. The catalog also features a cut-away photograph of this new lock. The S-series is designed for light/medium duty commercial and multi-housing applications.



**For FREE Information
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by Jake Jakubowski

A 'Not So Epic' Sequel

"How many times have you gone into a business or a home and found that the problem was a sagging door?"

In the June 1992 issue, I wrote an article entitled "Don't Just Stand There, Do Something." That article dealt with the installation of a new door, and a Roton full surface, continuous geared hinge (which is manufactured by Hager Hinge, of St. Louis, MO). This time around, I am going to show you another non-traditional way to gather some shekels.

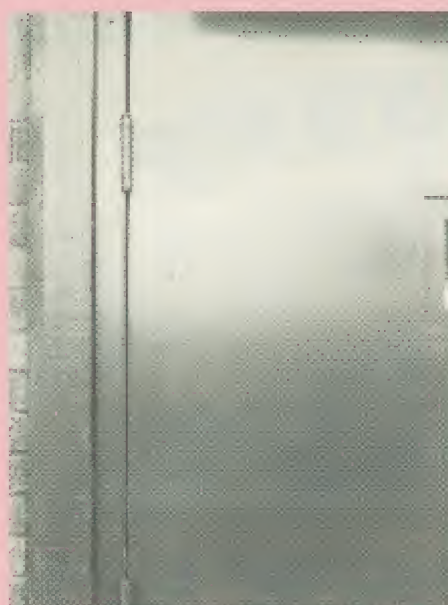
The reason I consider this article to be a "less than epic sequel" is the fact that the hinge I am going to show you how to install is smaller, costs less, and is faster to install than the previously discussed Roton. Also, it does not require any special tools (other than what's supplied with the hinge) and it can be readily handled by one person. In other words, "It's a breeze!"

How many times have you gone into a place of business to rekey, or repair a broken latch, and found out that the door you have to work with is sagging because at least one or more of the hinges (usually the top one) has bent, twisted, or loosened? The damage stems from stress loads on the door that far exceed the ability of the hinges to withstand. Such stress factors are generated by wind, slamming, and broomsticks stuck between the door and the jamb to prop the door open.

In addition to the stress factors, is the basic construction of the majority of metal doors and jambs. In my opinion, it seems just a bit on the ridiculous side that a 3'0", or a 4'0" metal door, which can easily weigh 175, plus, pounds, should be installed with only three, four inch butts. The way my polish mind sees it, there should be no less than *four*, four inch, butts on anything larger than a 2'6" steel door (which I have seldom seen in commercial applications).

To help substantiate the poor

construction hypothesis, photograph one shows separation of the door from the jamb *at the top hinge*. The kicker is the fact that the door had only been installed approximately forty-five days prior! Contributing to the overall problem, the door and frame were apparently misaligned during their installation. Whatever the cause of the problem, the door "sagged," and I was called because "the lock you installed is not working." Of course it wasn't!



1. This door is relatively new and it is already sagging, due to poor installation.

After pointing out to the customer that the reason the lock was "malfunctioning" was because the door was out of alignment, they wanted to know if I could "fix" it (the door). Since I have an aversion to walking away from money making opportunities, I said I could, would, and did!

What I did to correct the door problem was install a Hager Hinge #253, 4 1/2" wide, full surface, reinforcing, pivot hinge. Like I said

earlier, "It's a breeze!"

Photograph two shows the template (supplied with the hinge) taped in place, and ready for the drill points to be marked. After marking the drill sites for the top half of the hinge, I drilled four 7/16" diameter



2. Template taped in place to mark drill sites. Wooden trim had to be chiseled out to allow for placement of hinge.



3. The four 7/16" holes drilled to accept the Molly Jack nuts.

Continued from page 22



4. The Molly Jack nut, screw, and special wrench supplied with each hinge.

holes (see photograph 3) to accept the Molly Jack nuts supplied with each hinge. Photograph four shows a Molly Jack nut with the special wrench (supplied with each hinge) and the 1/4" x 20" screw. Once inserted into the proper sized hole, (see photograph 5) the screw is tightened which expands the jack nut inside the frame.

With the Molly Jack nuts installed, attach the upper portion of the hinge to the top frame of the door jamb with the screws provided. Once the top half of the hinge is installed, the next step is re-aligning the door. This can be accomplished with wedges, or whatever you find most convenient to do the job. Photograph six shows the door in alignment (notice the



5. The wrench holds the "Molly" in place while you tighten the screw, which expands the "Molly" behind the frame.

relationship of the door to the jamb) and held there by my wedge; it is time to mark the placement of the lower portion of the hinge.

The simplest method that I have found for marking the drill sites for the screws, that hold this portion of the hinge to the door, is to place the lower half of the hinge in position and mark the center of each hole with a sharp punch. After which, you drill

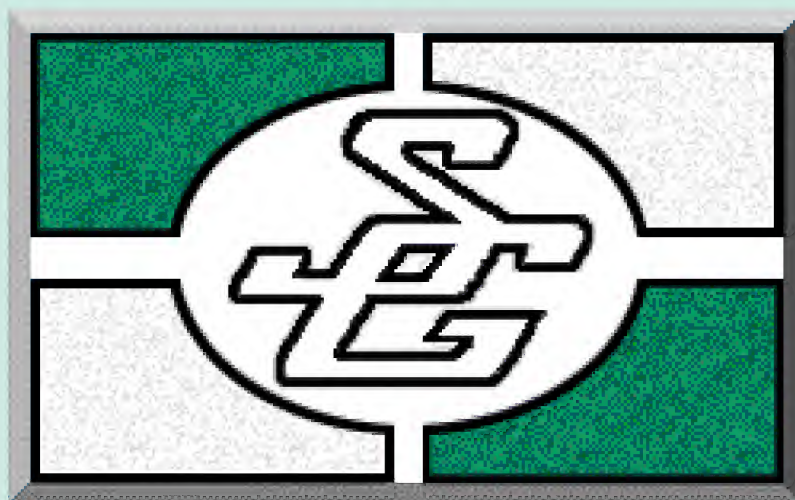


6. Showing the door in re-alignment on the latch side, and top edge of the door.

your holes, install the Molly Jack nuts, and then attach the lower section of the hinge to the door.

Once you have completed the installation of the hinge, remove your alignment wedge(s), and check the operation of the door. (See photograph

Continued on page 26



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Continued from page 24

7.) You may find it necessary to re-adjust the closer, since the door has been operating under stress. Once you have satisfied yourself that the door is functioning properly, collect your coin and go home.

One of the more pleasant aspects of installing this installation is that everything you need for the installation (except the hand tools) are included with the hinge: the screws, bolts, sex-nuts (if you opt to use them) the Molly Jack nuts, special wrench and template. Hager has made the installation of this product as simple as they can. I would almost say that it is fool-proof. Almost.

The installation that I have illustrated took just a little under an hour to complete. Admittedly, it was simpler than most, since I did not have to contend with a concrete-filled door jamb, which does take slightly longer. Considering that I charged the customer twice my cost for the hinge, plus an hourly rate to install it, plus my normal service call: it was definitely a profitable job. Figure it out. Any way you look at it, it's a money maker. Not bad, for an "alternative" service. Especially, since



7. This shows the completed hinge. The "raw" wood of the frame was painted to blend in with the rest of the wooden trim.

the customer was "looking" to me for an answer.

I realize that this type of service may not appeal to everyone, and some will reject the idea out of hand as not being "locksmithing." I have no quarrel with persons that might feel

that way. However, I believe that the more I can do for each of my customers (within reason), the more valuable I am to them. The more customer-satisfaction that I can generate with my customers, the less likely they are to call someone else the next time they need something.

The "up" side of a project of this nature is that you are in a position to recognize the need for this type of "alternative" service, since you are working on the door anyway. All you need to do is point the problem out to the customer, and tell them you can resolve it for them. Quote them a price, and carry some "extra" cash home. Since this is not a service that is readily available from your "competition" (you know, the police, etc.), the field just might be wide open in your area.

As I said back in June, there are alternatives to compensate for car openings being performed by the police, hardware store locksmith "competition," etc. Provided you are willing to say to yourself, "Don't just stand there, do something." Especially if you are already doing something for the customer. Any add-on sale can increase your profits. Even if it is less than epic in nature. §

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Doors & Windows...

Locks By Watchguard

"The Australian manufacturer has released a line of locks for windows and patio door just for the locksmith."

It is four o'clock in the afternoon. You are at a customer's house and you have just finished rekeying three locksets, installing four window locks and mounting a new brass entrance set. Tools packed, and halfway through the invoice, the customer asks if you would lock her patio door. No problem. You'll just install one of those Keyed Patio Bolts, charge her \$20 for it and another \$10 for labor. This should be a ten minute job. However, as you drill the third fixing hole ... crack ... crunch ... tinkle ... tinkle ... Guess who nicked the glass? And here comes that now-not-so-nice-old-lady. She wants that door fixed *now*. Pay for *your* work today? Not in

her lifetime. And she's going to tell all her friends *never* to go to Joe's Lock & Safe ... etc .. etc ...

That last \$20 Patio Bolt just cost you \$300 for the job and \$200 for the glass and labor to fix the door, not to mention losing every customer within three miles of her.

Horror stories like this, explain why so many locksmiths should have signs saying: "We don't give credit and we don't do patio doors."

Until now.

Watchguard Inc, the Australian manufacturer, has just released a range of locks for windows and patio doors into the U.S. One of these is call a "Hi Security Patio Bolt," shown in

illustration one. It is made of heavy diecast alloyed zinc, with a six inch

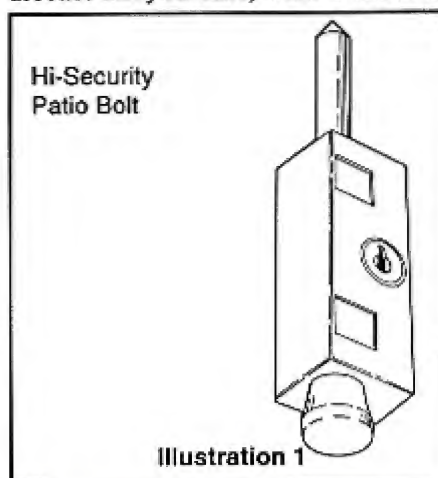


Illustration 1

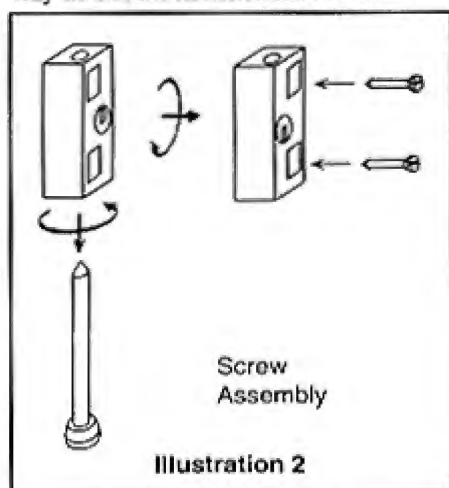
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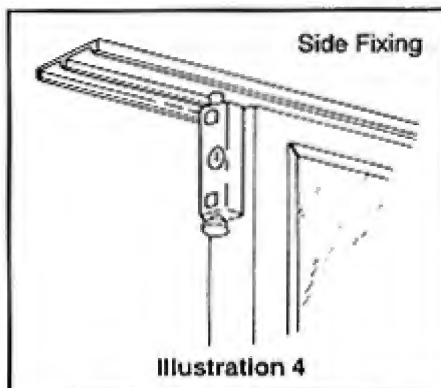
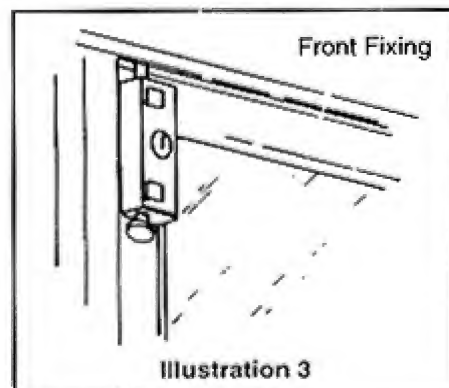
long 3/8" steel pin and it goes a long way toward preventing the above incident.

The problem with installing patio bolts is that quite often the fixing screws interfere with the glass and it isn't always obvious. The solution to this problem is very simple. Build a product with the fixing screws offset to one side, away from the glass. The next question is - which side? The designers came up with a not-so-obvious answer. Both. The pin can be removed with a pull and twist action and inserted from either direction allowing the bolt to be mounted either way as shown in illustration two.



The mechanism is simple, fast and it works. This means the product can always be installed with the screws off to one side avoiding the glass. The other benefit of a removable pin is that once inserted, the pin completely conceals the mounting screws, providing maximum security. Use either the self tapping metal thread screws for aluminum frames, or the longer wood screws for wood doors.

Patio bolts can be mounted either on the front face of the door (see illustration 3), or on the side of the sliding door frame. (See illustration 4.) However, this is frequently difficult with thin framed aluminum



doors. To meet this problem, Watchguard has provided a thinner product called the "Slimline Patio

Bolt." (See illustration 5.) This item is only one inch wide which allows it to mount onto the frame. A further complication is the top frame fixing screw which locks the vertical frame member to the top crosspiece. It commonly protrudes from the frame and interferes with the patio bolt. The Slimline Bolt addresses this problem with an "open back" design allowing the product to be mounted directly over the screw.

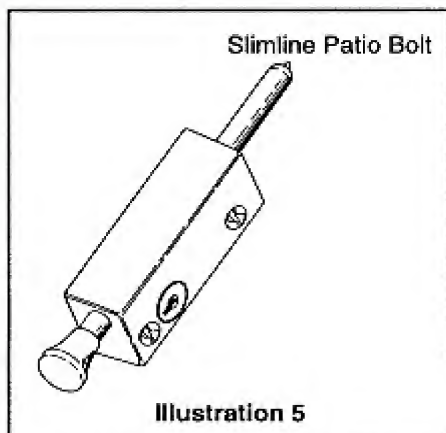
Another common problem found is when either the back door or both doors slide. You can't mount a bolt on the back sliding door, because it will



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interfere with the front door. The best way to secure these doors is with a steel pin through both doors, and naturally key locked. We call it our "Keyed Patio & Window Bolt" and it has four pin sizes available. (See

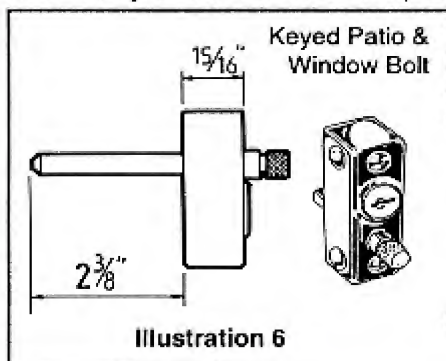
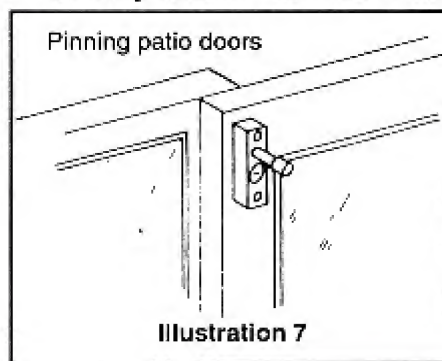


illustration 6.) The item can also be used on double hung windows.

There are two ways to mount this product. Horizontally, at the top or bottom which allows multiple ventilation locking holes to be drilled, or vertically, at the middle of the door frames which provides easy access for elderly or disabled persons. Installation is painless, simply drill three holes and screw the body to the frame. (See illustration 7.) However, it is highly recommended that conventional screws (which are supplied) are used initially to confirm that installation functions correctly, and then use the one-way screws.

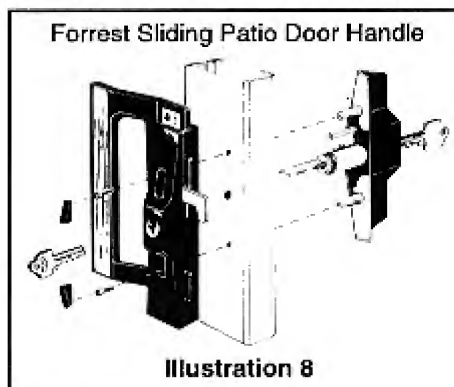
The pin can be removed with a release lever on the side of the body.

All very well ... but what if the



clients want access from the outside of their patio door, and still be able to lock from the inside? Fret not! You have yet to encounter the double cylinder, deadlocking "Forrest Sliding Door Handle."

As illustration eight shows, this heavy-duty handle surface mounts to the patio door frame, by screwing the inside handle to the outside handle.



This "clamping" action holds the door from both sides. You only have to drill two holes to mount the handle (three if an outside cylinder is used). The strike has slots instead of holes for the screws; three for face fixing, and three for side fixing. This allows the strike

Continued on page 105



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Locksmith Tools...

Tools From HPC

"As you screw down, the bolt will push the punch through the metal. You will have a neat hole just the right size."

Locksmiths all know about HPC key machines, lock picks and many other tools that HPC manufactures. However, there are some tools that HPC makes that you may not be as familiar with. It's not that these tools are new, it's just that they tend to get overlooked because HPC has so many new and exciting products. Let's take another look at three HPC tools that many locksmiths have used for a long time.

If you have ever had to install a cam lock on a sheet metal door you know that it can be a real job if all you have is a drill. You wind up with a round hole and have to figure some way to keep the lock from turning after it is installed. Sure, you can use special washers with wings, washers that attach to the metal or you could just tighten the lock down real hard and hope no one ever finds out it can be turned. We have all had customers with these kinds of locks installed all of these ways.

No professional locksmith would ever want to install a cam lock like this. We would use a tool that HPC makes just for this purpose, the HDPS-4. (See illustration 1.) The HDPS-4 is actually a little punch and die set. It can be used on cabinets, cash boxes and metal lockers to cut a hole that is exactly right for a cam or similar type lock that has two flat places on the side. Those flat places keep the lock from turning after it is installed. In the case of a cam lock it is

very important that the lock not be able to turn, because that would defeat the lock.

The HDPS-4 can be used on sheet metal up to 18 gauge. To use, simply measure where the center of the lock body is to be and center punch. Drill a 1/2 hole where you center punched. Place the die, which is just a collar, on the bolt then insert the bolt through the hole. The bolt has a machined portion that guides the punch. Place the punch onto the threaded end of the bolt then screw the nut onto the bolt with the angled cutting edges against the sheet metal. The punch will stay aligned the way you want it due to the machined portion on the bolt.

As you screw the bolt down it will push the punch through the metal. When it is all the way through you will have a neat hole, just the right size, with two flats that will exactly match up with the flats on the cam. When using this tool to install a Medeco cam lock, turn it so that the flats are offset 45 degrees. Always look at the lock you are going to install and make sure that you cut the hole with the flats so that they will match up properly with the flats on the lock.

HPC also makes something called Padlock Shim Picks (PSA-20). (See illustration 2.) This is an assortment of twenty padlock shims, five each of four sizes. All you need to do is insert a shim alongside the shackle, rotate the shim around and the lock is open. On locks that have locking lugs on both sides you use two shims.

Though some locksmiths think of these shims as just gimmicks that

only beginners would use, they really do work. Many people do not realize they will work on a genuine Master Lock Company padlock. These shims will open Master #1's, #3's, and #5's. They are something locksmiths should have on hand, ready to use, when they encounter a padlock that gives them problems with picking. Perhaps the shims might even be the first thing to use, even before picking the cylinder.

There is another HPC tool that tends to get overlooked. Like the padlock shims, it is one that some locksmiths have misconceptions about. It is the door puller for safe deposit boxes, the DP-7B. (See illustration 3.) Some locksmiths have opened quite a few safe deposit boxes. They have never pulled a door, however, nor have they ever drilled a hole into a safe deposit door. Some have always considered drilling into, or pulling, a safe deposit door unprofessional. So the very name "door puller" may not appeal to them. If you read the instructions for these door pullers, you will learn that they are intended to be used after the renter's plug has been removed, the guard key inserted and turned but the bolt will not retract. Once you have done all of the things that locksmiths normally do but the safe deposit box still does not open, the HPC Door Puller comes into play.

The door puller is basically a little wheel barrow and the door that needs

Continued on page 105

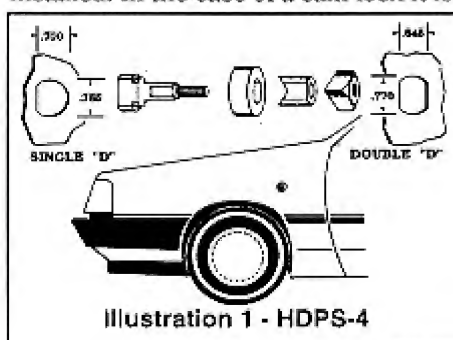


Illustration 1 - HDPS-4

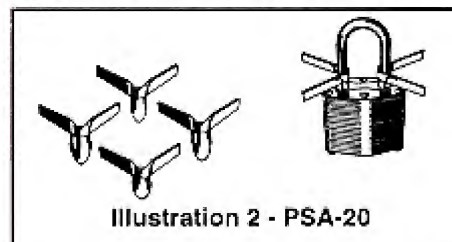


Illustration 2 - PSA-20

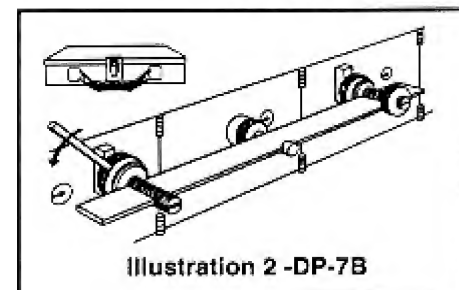


Illustration 3 - DP-7B

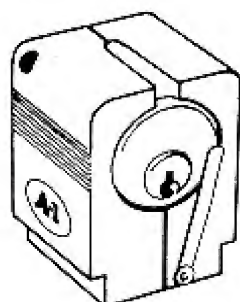
Tool

Review

If there is one thing that locksmiths really love it is their tools. There is a tool for every purpose under heaven. Some are clever and nice to have. While others are truly indispensable. In this product review section we present you with a variety of the tools manufactured to meet the needs of the locksmith. Feel free to use the Rapid Reply card to request information on any interesting product you may see here.

A-1 Tools For Medeco® Cylinders

A-1 Security Manufacturing Corp. has introduced two new tools for servicing Medeco Cylinders. The Multi Purpose Service Block is a decoding block holding fixture and pinning tray for mortise, rim, and cylindrical cylinders. Also available is A-1's staking tool for Medeco. Used in conjunction with the Multi Purpose Service Block, key-in-knob cylinders can be staked quickly and professionally.

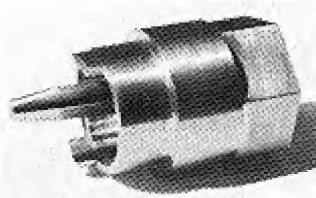


Circle 272 on Rapid Reply

34 The National Locksmith

Aable Locksmith's Ford Quick-On

Frank Markisello of Aable Locksmiths has designed yet another new tool. The Ford Quick-On will turn all Ford 10 cut side bar ignition cylinders to the on position, for fast removal or starting, in less than 60 seconds. The Ford Quick-On is made of hardened steel, has two cutting tabs which cut into the face of the cylinder to give you the high torque you need to shear the side bar, and a replaceable hardened steel key guide to locate the two tabs in their exact location.



Circle 273 on Rapid Reply

American Tool's New Bar Clamp

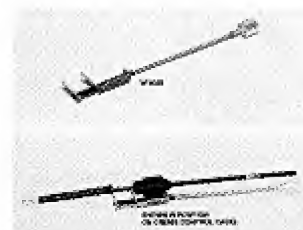
American Tool Companies, Inc., has introduced a new line of bar clamps featuring a unique, one-handed locking mechanism. The new QUICK-GRIP® bar clamps are available in five sizes with 6", 12", 18", 24" and 36" jaw openings. QUICK-GRIP® bar clamps' jaws and handle are made of strong lightweight glass-filled nylon. The clamp jaws also come with pliable pads to protect wood and soft materials. American Tool Companies also manufactures VISE-GRIP® locking pliers and clamps, PRO-SNIP® snips, UNIBIT® stepdrills, and CHESCO® hex tools.



Circle 274 on Rapid Reply

Burroughs Throttle Position Holders

Burroughs Tool & Equipment Corporation is announcing development of a Throttle Position Holder tool for GM cars. The BT9028 Throttle Position Holder is universal and works on all GM cars with cruise control (1980-1991.) The tool is designed to give position throttle linkage control when making adjustments. The BT9028 features extra-thin heat-treated jaws that fit into tight areas, yet will not bend. Flex shaft allows access around obstructions and provides positive grip.



Circle 275 on Rapid Reply

Continued on page 36

\$ Profitable Ideas

New &

Following are a number of interesting ideas you might want to consider for your business. You should always remain open to new ideas and products that might help you profit more. Under each product item there is a Rapid Reply number. On items that interest you, circle the number on the Rapid Reply Card. You will then receive literature on those items which you have requested.

A-1 Security's Tool Kit

A-1 Security Manufacturing Corp. introduces the Interchangeable Core Tool Kit (#ICKT). Included in the kit are three tools for servicing interchangeable core. Included are: the block, a highly specialized tool used to decode pin chambers for the control key code; the capping block, which caps both Best® and Falcon® types and the unique dumping block.

In addition to the #ICKT, A-1 offers a full array of tools for I/C core including accessories for servicing Peaks® 140 spacing.



Circle 306 on Rapid Reply

Aable Locksmiths' Plug Remover

Frank Markisello of Aable Locksmiths announces his new squeeze lock plug remover. Just slide the tool over lock locking plungers, flip the tool up, and the two shims at the tip of the tool. Fingers will slide between the cylinder and the holding tabs. Turn the knob at the top of tool and the two fingers will open the holding tabs at the exact moment the plunger will push the cylinder out of lock.



Circle 307 on Rapid Reply

Access Spec.'s Lever Conversion

A lever handle which can be readily adapted to standard doorknobs, to meet guidelines of the Americans with Disabilities Act, has been introduced by Access Specialties and Products, Inc.

Gary Spalding, sales director of the firm, said the Model ADA-I lever can be fitted to most doorknobs in about two minutes, using two standard Allen wrenches.

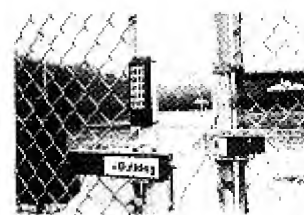
The machined aluminum device is non-handed, available to fit common 2 1/8" and 2 1/4" doorknobs.



Circle 308 on Rapid Reply

Automatic Gate Openers' Bulldog®

The Bulldog® is a new, low cost, automatic gate lock that provides controlled access with excellent security for personal "walk-through" gates in swimming pool and tennis enclosures, fenced areas of the home, secure areas of business and industry, airports, government facilities, apartments, and other installations needing access control. The Bulldog is easily surface mounted on wood, chain link, or metal gates, with no drilling or welding required in most installations.



Circle 309 on Rapid Reply

Continued from page 36

Howard Mfg.'s Pressure Gauges

Determining proper opening/closing force for all types of doors has been an ongoing problem for many professionals. ADA, (The Americans With Disabilities Act) the Uniform Building Code, ANSI Fire Door Code and Uniform Fire Code all contain specific requirements regarding door opening and/or closing force. Howard Manufacturing Company's door pressure gauges come in two sizes. The larger of the two instruments tests door pressures up to 35# force, while the smaller one determines door pressures to 7#.

These instruments are accurate, inexpensive and pocket carryable.



Circle 280 on Rapid Reply

HPC's New Tubular Lock Killer

HPC's new Tubular Lock Killer (TLK-50) is a simple, easy-to-use tool that will open most tubular key locks. A tempered steel collet with fingers that grip the lock is inserted into the lock's keyway. A hollow steel tube slides into the collet, over the center post, and pushes the fingers out to securely grip the lock. Then it is simply a matter of tightening the nut down to defeat the lock. Tubular key locks that have a smooth outer shell, such as those used on T-handles, padlocks and bicycle locks, can be defeated by this tool. The retainer pin is pulled forward and the entire inner cylinder is removed.



Circle 281 on Rapid Reply

Kett Tool Company Catalog

The Kett Tool Company's ten-page, full color catalog details the entire line of Kett Tool portable power saws, shears, nibblers, kits, and accessories. Ideal for repairing, restoring, or building, these tools work effectively with either metal or plastic. Products, including the PD-1001 straight-handled pneumatic drill, the 1020 Nibbler attachment, and the K-442 16 gauge Shears, are highlighted in the catalog.

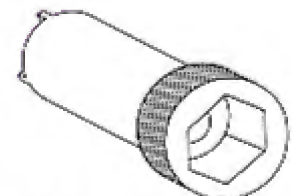


Circle 282 on Rapid Reply

Major Mfg.'s HIT-2 Nut Driver

Designed as a companion tool to the HIT 1 jig, the HIT-2 is a multi-purpose nut driver for use on Schlage Rhodes, Assa Brooklyn, Arrow Sierra, and Sargent LN locks. The HIT-2 provides a better grip and control when tightening the locking nut than the plastic tool provided by the manufacturer, greatly decreasing installation time.

Machined from 6061 aluminum, the HIT-2 will offer years of professional service.



Circle 283 on Rapid Reply



Don't panic!
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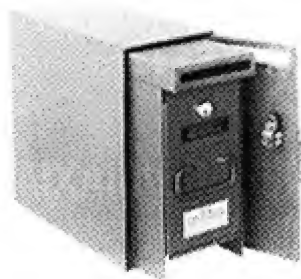
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Continued on page 44

Perma-Vault's New Drop Box

The dual compartment drop box is an affordable, safe and convenient depository for the interim storage of cash and checks available from Perma-Vault Security Products. The exclusive removable inner safe can be exchanged for easy transfer to a counting room or cash pick-up service.

There are two sizes available: Model PRO-1200-M is 6" x 12" x 11-1/2" and Model PRO 1900-M is 6" x 19-1/8" x 11-1/2"; which bolt within arms length of a cash register.



Circle 322 on Rapid Reply

Personal Security's Countertop Rack

Personal Security, a wholesale distributor of security and self-protection products to the locksmith and security dealer trades, announces the introduction of a multi-product countertop rack for retailers.

The Personal Security Rack contains eight proven products, including Mace brand self-protection spray, PepperGard spray, Screacher sonic alarm, Muzzle canine repellent and several other products.

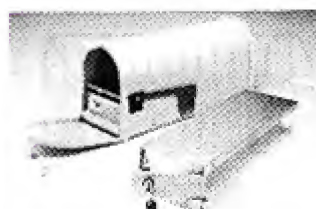


Circle 323 on Rapid Reply

Pride Barco's Mailbox Lock

Mail theft and tampering has become such an epidemic that the U.S. Post Office is now recommending locked mailboxes for home use. Pride Barco Lock Company has come up with a terrific product to thwart thieves and keep personal correspondence private. It's the Pri-Va-Cee Mail Safe, a locking insert which fits neatly inside all existing U.S. Postmaster General approved rural style mailboxes.

Designed as a kit which can be installed without any special tools, the Mail Safe turns any mailbox into a locked receptacle.



Circle 324 on Rapid Reply

Pro-Lok's Car Opening Light

A year ago Pro-Lok introduced the AL2000 car opening light, and now they are upgrading the standard on year warrantee to a lifetime warranty.

The Pro-Lok AL2000 is a high quality car opening. The unique construction of these lights makes them virtually indestructible.

Features include a case made of high impact plastic, a wand, the switch with a 50,000 cycle testing and the coiled cable.



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Continued from page 42

STI's 'Keys Under Glass'

Safety Technology International addresses the problem of keys that must be available in case of emergency, but must not be too easily accessible. "Keys Under Glass" make it necessary to break the glass, thus alerting everyone to what's happening.

The keys are visible and available, and glass replacement is simple, options include a tamperproof screw kit, and a Neoprene gasket for weather proofing.



Circle 326 on Rapid Reply

Environmental Padlock By S&G

The Environmental Padlock from Sargent & Greenleaf is built to stamp up to contamination, moisture and freezing and designed to clean itself with each use, thus ensuring that the lock will always open under tough conditions. It's applications include vending machines, railroads, trucking, utilities, marine, and construction.

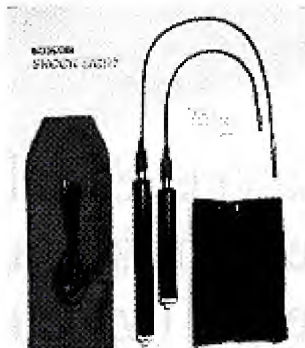


Circle 327 on Rapid Reply

Snook Light Kits From T.L. Snook

T.L. Snook makes light kits for car opening, safe and alarm installation. These kits are machined from aircraft aluminum also construction with a front connector and turn switch at the base. The flexible 10 and 15 inch necks come with standard high intensity or new Xenon super high output, 15% more efficient than Krypton.

The kits come in nylon velcro pouches which fit in a shirt pocket and contain all five pieces.



Circle 328 on Rapid Reply

Continued on page 46

New Inverter By Statpower

Statpower Technologies Corporation introduces their all new PROwatt 1500 DC to AC Inverter. This 1500 watt, continuous power inverter allows the locksmith to run all kinds of key machines, drills and similar equipment. With enough surge to start a 3/4 HP induction motor and higher power ratings over its 1500 watt continuous amount (for shorter time periods) the PROwatt 1500 has the power necessary to make the job much easier for the mobile locksmith.

The PROwatt 1500's exceptionally small size (8.5 lbs) allows it to be mounted in a number of areas in the service vehicle or van.



Circle 329 on Rapid Reply



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Infinity Controller From Trionics

The MK-2 LCD is an LCD keypad designed for use with the Infinity 9610 Programmable Controller. It features design styling, separate high fidelity speaker and microphone, extremely thin design and is available in three color choices to blend in nicely with all residential and commercial applications.

User operation is simple as keys are clearly labeled and illuminated. The high contrast LCD is easily read and illuminated as well.

The MK-2 LCD produces clear speech for the built-in intercom system and the control's digitally recorded speech announcements.

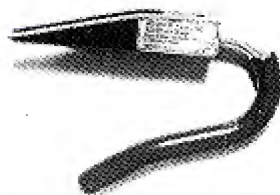


Circle 334 on Rapid Reply

Wedge-It™ 2 in 1 Tool

The Wedge-It™ is a self lubricating, easy-to-use opening tool for locksmiths. Field tested on all makes and models of cars, this tool's high strength molded nylon and glass material allows for a sharp wedge point, without scratching or damaging window glass, trim panels, or painted surfaces.

Applications of the Wedge-It include spreading a gap between the window glass and weather stripping, and for the removal of interior door panels held in position by push-in fasteners.



Circle 335 on Rapid Reply

Weiser Lock Offers Entry Lock

The new Combo Pack by Weiser Lock offers the double security of an entry lock and a single or double cylinder deadbolt lock. The same key operates both locks, and the clear-view display package includes four keys and instructions for easy installation.

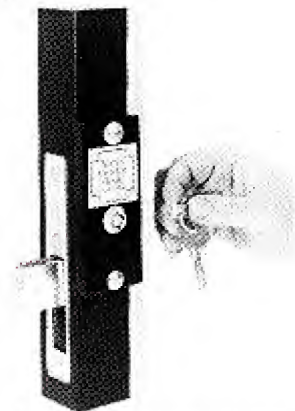
The single cylinder security deadbolt is keyed one side; the double cylinder is keyed both sides. All of the deadbolt units have a full one-inch bolt which resists sawing and prying. The deadbolt's tapered trim resists wrenching, and comes with a heavy duty strike and extra-long (3") strike mounting screws.



Circle 336 on Rapid Reply

The Lou Werner Cylinder Guard

"The Werner Cylinder Guard" is designed to conceal the keyway so that the only access is through the special configuration plug. This plug is removed by inserting a tool which can be carried on a key chain. The owner can insert his key in the lock and open the door. The plug is then replaced in the "Cylinder Guard" preventing anyone from tampering with the cylinder.



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by Tom Seroogy

1993 Mercury Villager

"Built with Nissan, the door and compartment locks are similar to Escort locks; the ignition, however, is not."

It is now time to see the new 1993 model vehicles so, I took the opportunity to view Mercury's new minivan, the Villager. (See *photograph 1.*)

Built in conjunction with Nissan



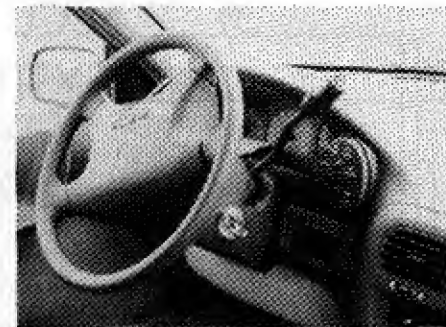
1. The 1993 Mercury Villager.

(Nissan's version is called the Quest), all the door and compartment locks are similar to the '91 and '92 Escort locks. The ignition, however, is similar to the normal 10 cut ignitions found on the '90-'92 Marquis.

The Villager I worked on had tilt wheel and no airbag. The procedure for removing the ignition is identical to previous years' ignition. (See *photograph 2.*) After removing the bottom half of the column shroud and turning the key to the "ACCESSORY" position, depress the retaining pin and pull the lock from the housing.

The ignition disassembles easily and holds tumblers 5-10, bow to tip. Unlike previous years the retaining cap is "U"

shaped (like the GM retainers) and not "L" shaped. This will make any repairs requiring its removal more practical. If it becomes necessary, ASP ignition C42-151 seems to be a feasible



2. The Villager dash board.

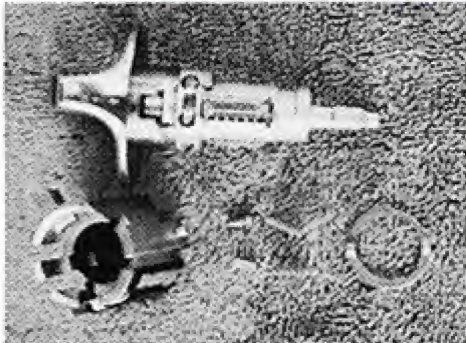


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replacement. (See photograph 3.)

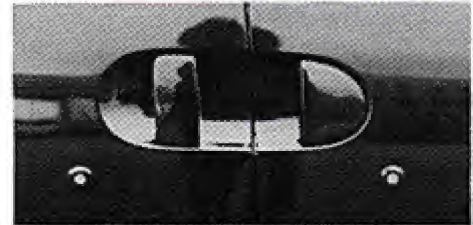
It should be noted that if it is



3. The disassembled ignition.

necessary to replace an ignition, the door lock tumblers overlap the ignition in four of the spaces (5-8), instead of the customary 2 spaces (5-6). This means it is still necessary to rekey the ignition if the vehicle is to remain on one key.

There are four door locks to the Villager: the driver and passenger door lock, the side door lock, and the tailgate lock. (See photograph 4.) As with the '91-'92 Escorts, it is necessary to tear down the door panel should these locks have to be repaired or replaced. Gone, it seems, is the simple door clip on the



4. The Villager door locks.

edge of the door.

All of these locks, as well as the compartment lock located just below the front passenger side seat, have 5 tumblers located in spaces 4-8. (See photograph 5.) On the door locks, the tumblers are clearly visible through a small window on the bottom of the lock. Tumblers on the compartment lock are visible when in the locked, 612 o'clock, position. When in the unlocked, 3-9 o'clock, position the tumblers are not visible in the window.



5. Disassembled lock.

Disassembling the door/compartment locks reveal a 6 tumbler plug. Only 5 of these spaces are used. (See photograph 6.) All of the tumblers were marked with their corresponding depth. ASP combination keying kit #A42-100 contains the necessary tumblers, shutters (chrome, P42-231), and facecaps (black, P42-202) to repair these locks.



6. The five tumblers used on this lock.

The glovebox lock is fairly accessible after removing a few screws; although, except for replacement reasons, there is no need to do so. The glove box houses tumblers 8 and 10. (See photograph 7.)

While many of the locks and parts are available, a full lockset can be purchased from your local Ford dealer (part #F3XY1222050-B). The price ranges from \$53 to \$56 to the

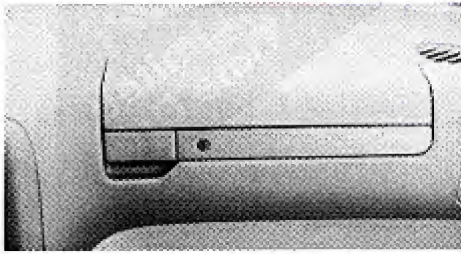
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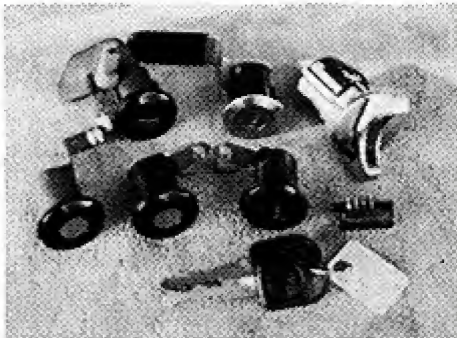
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7. The glove box lock.

locksmith. This price should be considered when doing repair work on this vehicle. Many times the advantages of R&R (remove and replace) outweigh the savings of R&T (remove and tinker). (See photograph 8.)

Generating a key for this vehicle



8. Replacement locks are readily available.

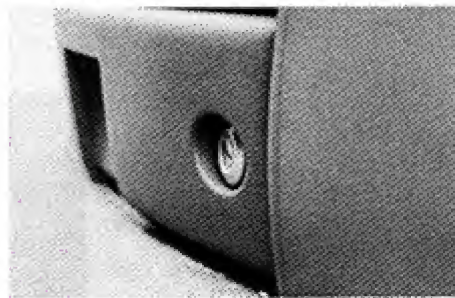
	BOW										TIP
Space	1	2	3	4	5	6	7	8	9	10	
Ignition					X	X	X	X	X	X	
Doors				X	X	X	X	X			
Glove Box								X		X	

Illustration 9 - This shows lock vs. tumbler placement. Notice that spaces 1-3 are not utilized and that the key can be easily progressed.

should be smooth and painless (at least for the locksmith). As with the '91-'92 Escorts, cuts 1-3 on the key are not used in any lock. (See illustration 9.) To get cuts for 4-10 follow this procedure.

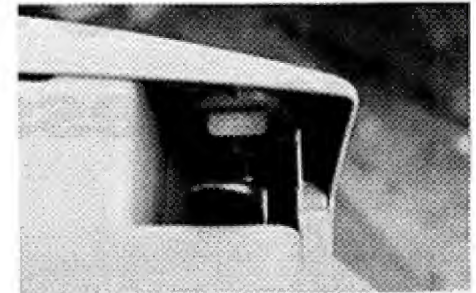
1. Cuts 4-8. Remove the lock from the compartment below the passenger seat (See photograph 10.) Sliding the compartment forward while lifting up will release the compartment drawer from the slide rails.

Because the lock is in the unlocked



10. Lock on compartment below seat.

position, the tumblers will not be visible through the window on the bottom. Either pick the lock to the locked position or remove the lock for disassembly. (See photograph 11.) Use the ASP facecap #P42-201 (chrome) for reassembly.



11. The lock removed.

2. Cut 10. Go to the glovebox and progression cut 10.

3. Cut 9. Go to the ignition and progression cut 9.

Your key is done! §



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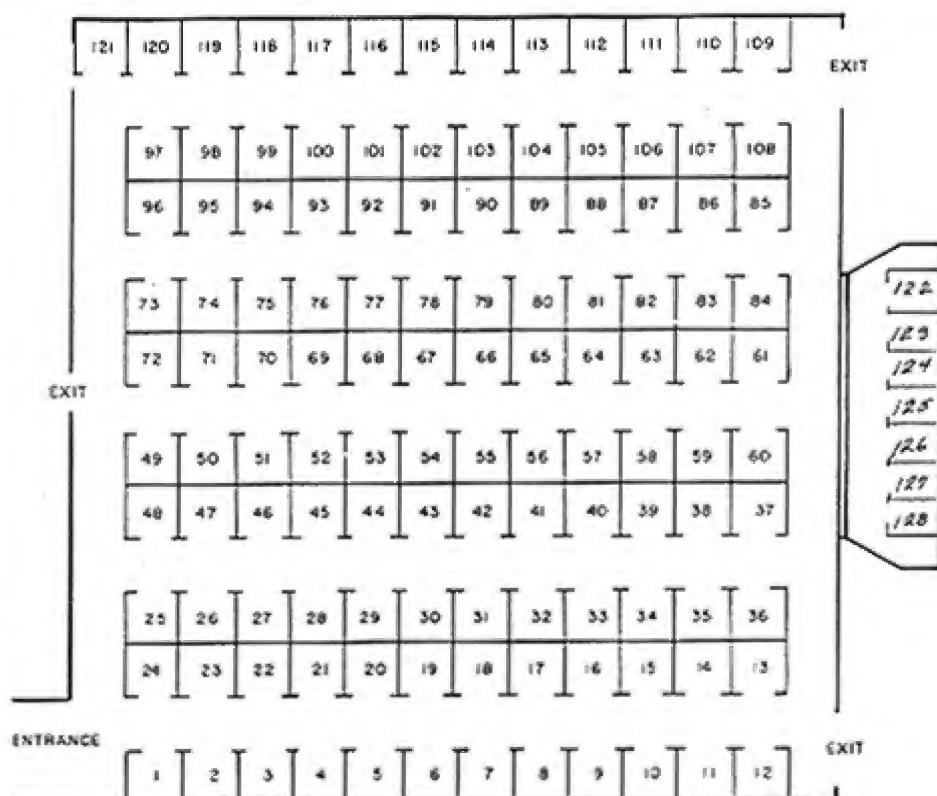
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Locksmith Skills...

by Robert Slevoking

Reading Wafer Locks

"To understand how we can 'read' the key combination, you need to understand the differences in the wafers."

This article, much like a Technitip, is the result of my experience and successes making keys for wafer lock cylinders without codes or disassembly. Wafer lock reading is a skill that is relatively easy to master, and one that will bring big dividends, in saved time and effort. Most foreign automotive locks are of the wafer design, as are many desk and cabinet locks. By mastering wafer lock reading, you will greatly simplify many key making tasks.

What specific mechanical characteristics of the wafer lock make reading possible? How can these characteristics be "read," by the locksmith, to determine the combination of an unknown key? What tools will I need, to successfully and consistently read wafer lock cylinders and make their keys? Could we walk through a quick "reading," just for practice?

The simplified example, for the purpose of our explanation, is shown in illustration one. The wafer tumbler cam lock, shown in the illustration, is very similar to most wafer locks you will find. The lock is made up of the plug and the shell. The shell, or cylinder housing, encloses the round plug. The plug is prevented from turning by metal "wafers," which are spring loaded to extend from the plug when no key is present in the keyway. Individual wafer springs force the wafers to extend from the plug, as you see in the illustration. The wafers extend into the wafer compartments of the cylinder housing, to prevent the cylinder from being rotated.

The key, also shown in the illustration, is milled to pass the wards of the keyway, and enter through the face of the plug. The key passes through all the "keyways" of the wafers. The keyway is the square cut-out in the center of each wafer. The wafer springs cause the wafers to ride

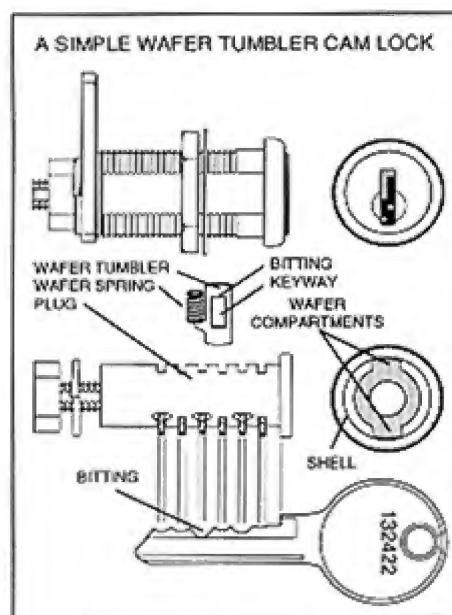


Illustration 1

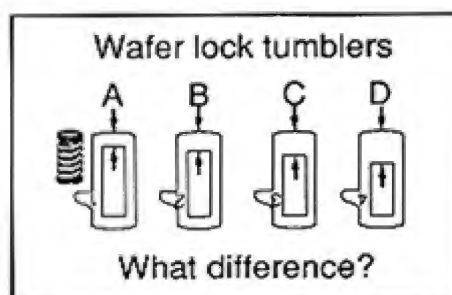


Illustration 2

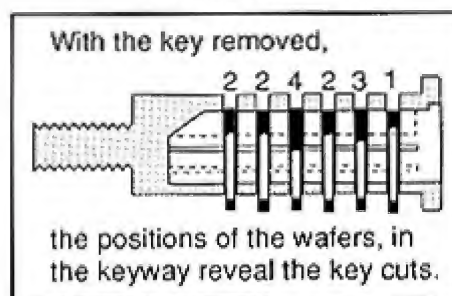


Illustration 3

on the bitting of the key. When the correct key has fully entered the plug, and all the wafers are seated with their bitting edge resting in the bitting

of the key, the wafers will be drawn into the plug and the plug will be free to rotate. If a cut is too deep or too shallow, the bitting of the key will allow the wafer to drop farther than it should or not far enough. The wafer will extend from the plug, preventing the plug from being rotated. All wafer locks operate using this same principle, with very few exceptions.

To understand how we can peer into a keyway and "read" the combination of a lock cylinder, without picking the cylinder, you need to understand the differences in the wafers. What is the difference between a four wafer and a one wafer? Illustration two shows the wafers used in our cylinder. You will notice that each is labeled, on the spring ear, according to its cut depth. Our example cylinder has four possible cut depths. The width of the bitting end of the wafer determines the cut depth required to pull the wafer into the plug. A "#1" wafer is very narrow, as shown at "A" in the illustration, and a "4" depth wafer is much wider, as you can see at "D." The deeper the cut in the key, the wider the bitting portion of the wafer will be.

If we were to cut the plug and wafers, shown in illustration one in half, we would be able to see how the bittings of the wafers appear in the keyway, with the key removed. Illustration three shows just such a situation. With no key in the keyway, all the wafers are forced out of the plug, into the wafer compartment of the cylinder shell. The cylinder will be locked, or prevented from being rotated, by the wafers. The bottoms of all the wafers are aligned by the depth of the wafer compartment. With the bottoms of the wafers resting in the wafer compartment, it is easy to see that the bitting edges of the wafers describe the profile of the unknown key by their relative positions in the

Continued on page 58

Continued from page 54

keyway. A high bitting (A shallow or number 1 cut) is high in the keyway, showing only a small part of the wafer. A low bitting (a deep or number 4 cut) is low in the keyway, showing a larger part of the wafer.

Illustration four shows the face of the lock cylinder. As we look into the keyway of the cylinder, with the cylinder locked, the wafers will be approximately as you see in the illustration. A #1 wafer, shows very little in the keyway. It is the shallowest cut. Use the warding in the keyway to judge the height of the wafer bitting. The 1 cut wafer is approximately at the center of the major keyway ward. a #2 wafer shows more than the #1 wafer. It appears to be about 3/4 down on the major keyway ward. A #3 cut wafer is level with the bottom of the major keyway ward, and a #4 cut wafer is even with the minor ward, on the right side of the keyway. As you can see, the heights of the bittings in the keyway reveal the relative depths of the cuts in the unknown key.

If all of the wafers could be raised, together, exactly the same distance, the cylinder would be picked or solved, as you see in illustration five. The position of the bittings would

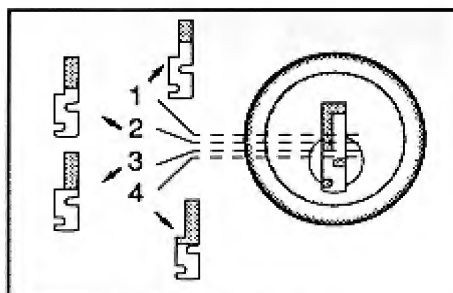


Illustration 4

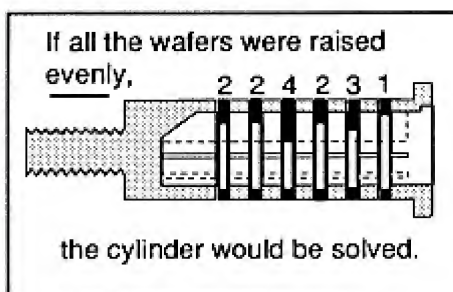


Illustration 5

then reveal the exact cut depth. With the cylinder in the locked condition, however, the cut depth is only a relative height. As we read the wafers, we are looking for their relative heights, with the knowledge that there are only four depths. We use the warding, in the keyway, as a guide to judge the heights of the wafers. We do

not want to pick the cylinder to read it. It is always best to read a cylinder in the locked condition.

There are only three things you will need to read wafer locks. The first two are relatively inexpensive, and the third is less than a hundred dollars. You will need a reader tool, as you see in illustration six. You won't be able to buy one, but you can easily make it. The reader tool in the illustration is of my own design. It was made from a medium tension wrench. The blade is 1/8" wide, and about .025" thick. The

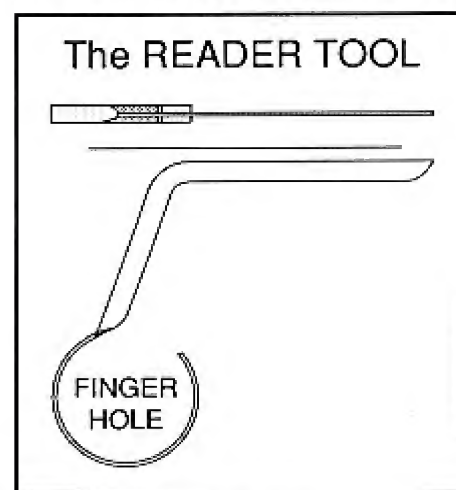
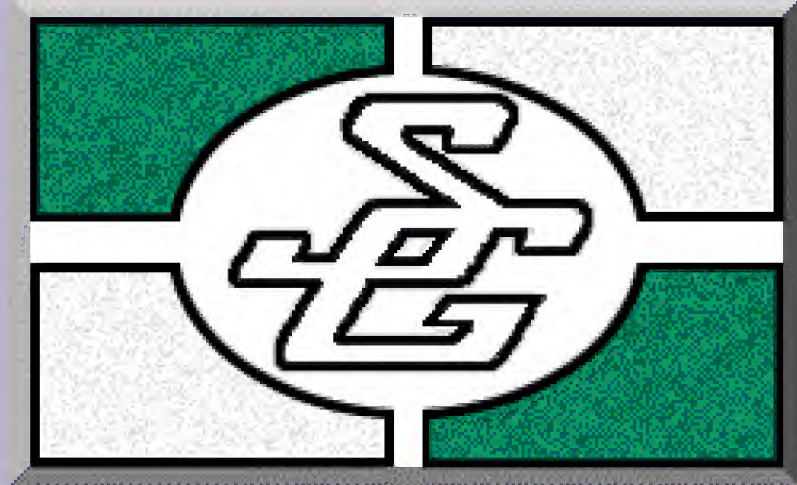


Illustration 6



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short taper, at the point, is much like the tip of a key. It is made to glide over and depress the wafers of a cylinder, without catching. The "flat bend," at the rear of the depressor blade, is made to get your fingers below and clear of the keyway. It allows you to look over, and down the depressor, into a keyway. The finger loop was fashioned to fit over the second finger. This gave better tool control. The tool is slipped over the second joint of the second finger, and the thumb is used to apply sufficient pressure at the rear of the "flat bend", to depress the wafers, as the tool is inserted into the keyway.

The second tool you will require is a bit of specific knowledge. That is, in part, the object of this article. You need to know what you are looking at, if you intend to successfully read the cylinder. In most cases, before I go to a car, or look into a keyway, I will look up the lock. I need to know what is the correct key for this cylinder, how many positions (the spaces for possible cuts) are on the key, how many wafers the cylinder will have (in some cases, not all wafers are present in the door cylinder of an auto), and

how many depths are used in the lock series (some combinations will not use all of the possible depths). In most cases, at least historically, this information was found on the HPC 1200CM code card for the lock series being read. Some of the knowledge is more easily kept in a pocket notebook, being gathered through actual experience. Keep a notebook, it remembers the facts more accurately.

The last tool you will need is a "good" otoscope. Sure, you could read a lock with a pen light or your five cell flash, but why? The otoscope should have a focused high intensity light. In most cases the battery handle will use two "C" cells. The otoscope should also have a large diameter magnifying lens. The scopes with the smaller lenses are not as easy to use as those with the larger diameter lenses. Forget buying the "depressor" adapter for the otoscope. You will probably find that it is not as easy to use as the reader tool illustrated above.

As when buying most tools, don't opt for the cheapest thing you can find. Buy the best, and enjoy the difference. Use alkaline batteries in

your otoscope, "always." There seems to be a difference in the voltage of an alkaline battery, that will greatly prolong the life of your high intensity bulb, but you should have an extra bulb on hand anyway.

Though not absolutely necessary, it is a great help to have a way of making keys to dimension. A good code machine is a real help to the locksmith that reads. A Pipin file and a slip gauge will do the job, if you do not have access to a code machine. Depth and space keys are another very acceptable option. I still use some of the depth and space keys I made on a Foley Belsaw machine, not so many years ago.

Let's walk through a quick reading, just for practice.

Sighting the wafers is not a difficult task, but there are a few points that you must observe. The plug should be in good working order. You might even lubricate it with a little spray cleaner/lubricant to insure free movement of the wafers. Run a key in and out of the plug a few times, to exercise the wafers and insure that they are working freely.

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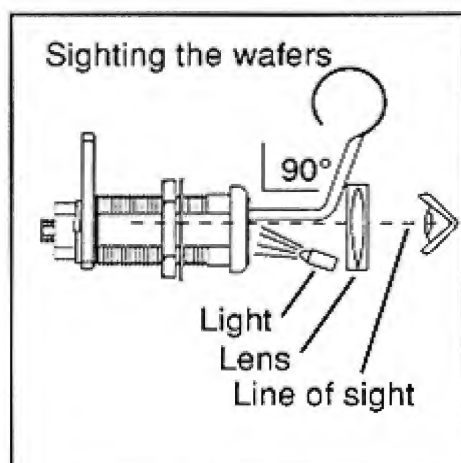


Illustration 7

The reader tool is inserted into the lock at a right angle to the face, as you see in illustration seven. Do not insert the tool at an angle. There is no need to "wiggle" or "pick" the wafers. Insert the reader to the back of the plug, and draw it out slowly, while observing the action of the wafers with the otoscope. Each should "snap" up as it is released. Count the wafers, and be "sure" that they all rise up as the reader is withdrawn from the keyway. We don't want to read a cylinder, only to find that we missed a

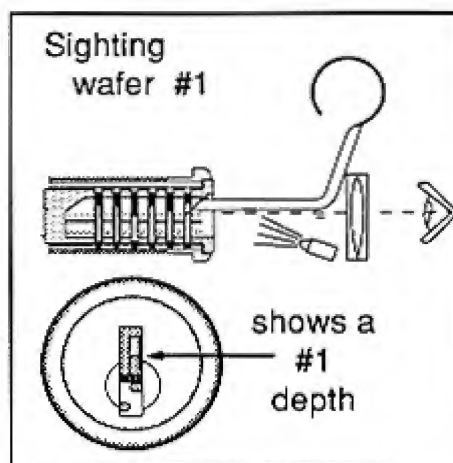


Illustration 8

wafer because it was seized (stuck) in the plug. Re-lubricate and exercise the wafers until they are working freely.

The line of sight, as you see in illustration seven, is centered in the keyway. You are sighting straight down the blade of the reader tool. If you sight from above or below the center of the keyway, it will be more difficult to accurately gauge the heights of the wafers, with reference to the keyway wards.

You will notice in illustration seven, that the light on the otoscope is above

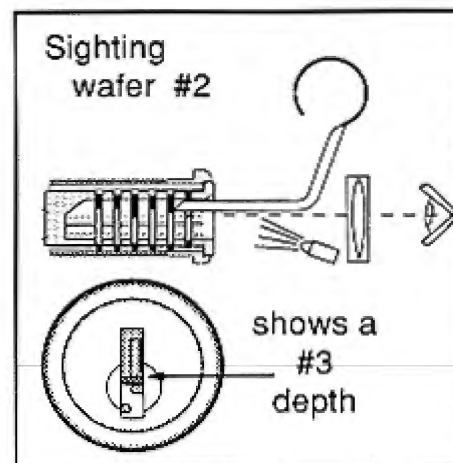


Illustration 9

the wafers, though, in this case, the wafers are at the top of the keyway, and the light is at the bottom. The light is such that the wafers do not create a shadow that could obstruct or block clear viewing of the wafers deeper in the keyway. Always position the light above the wafers, at the opposite side of the keyway from the reader tool.

Though not necessary to view wafer number one, the reader tool is shown in the keyway of illustration eight. The width of the reader tool can

Continued on page 62

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Continued from page 60

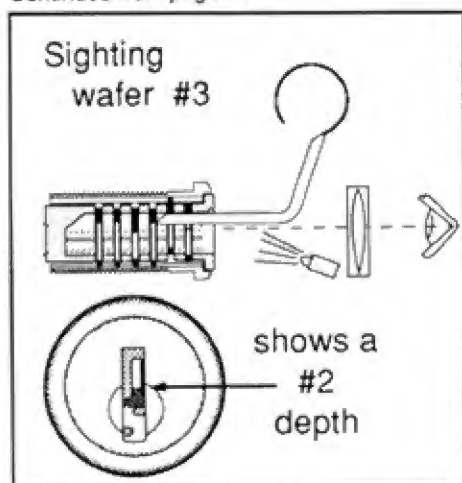


Illustration 10

be used, the same as we might use the keyway warding, to judge the relative height of the wafer bittings. In illustration eight we clearly see a #1 wafer. It is exposed in the enlarged keyway, and is approximately half the height of the primary keyway ward. We can also see a #3 wafer and a #4 wafer, deeper in the keyway, behind the number one wafer. The first cut of our unknown key is a #1 depth.

In illustration nine the reader tool has been used to depress the number

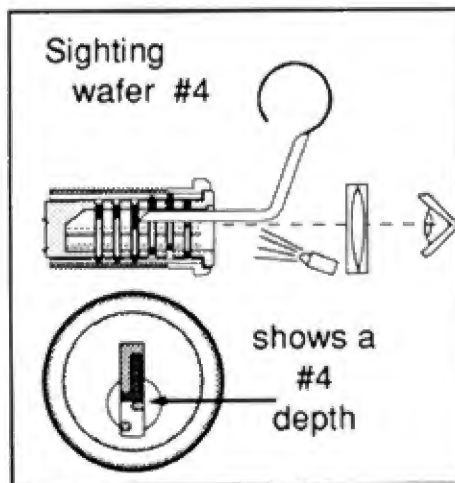


Illustration 11

one wafer. It is held up, and we can view the second wafer. The enlarged inset shows the second to be a #3 depth. The bitting edge of the wafer keyway is approximately even with the bottom of the primary keyway ward. A #4 depth wafer is visible, deeper in the keyway. The second cut of our unknown key is a #3 depth.

In illustration 10 the reader tool has been inserted deeper into the keyway. As you can see in the illustration, it is lifting the first and

second wafers, to reveal the third. With the first two wafers held up, we can view the third wafer. The enlarged inset shows the third wafer to be a #2 depth. The bitting edge of the wafer keyway is approximately 3/4 of the height of the primary keyway ward. We were unable to see the #2 depth wafer, until the higher #3 wafer, in the second position, had been depressed. The #4 depth wafer is still visible, deeper in the keyway. The third cut of our unknown key is a #2 depth.

In illustration 11 the reader tool has been pushed deeper into the keyway. As we can see in the illustration, the first, second, and third wafers, counting from the front of the keyway to the rear, have been lifted above the keyway. This allows us a clear view of the fourth wafer. The enlarged inset shows the fourth wafer to be a #4 depth.

The bitting edge of the wafer keyway is approximately even with the top of the second keyway ward. No other wafers are visible. The fourth cut of our unknown key is a #4 depth.

In illustration 12 the reader tool

Continued on page 64



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Continued from page 62

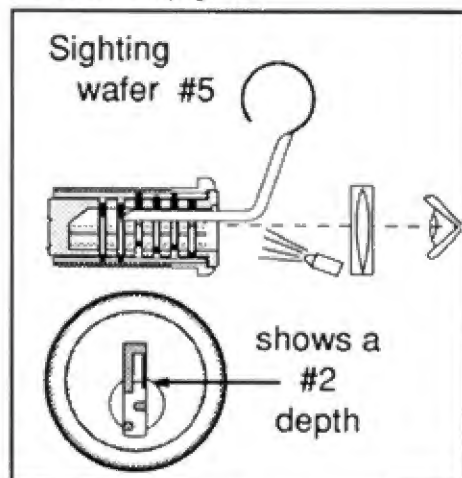


Illustration 12

has been slid deeper into the keyway. As we can see in the illustration, the first, second, third, and fourth wafers, counting from the front of the keyway to the rear, have been lifted above the keyway. This allows us a clear view of

the fifth fifth wafer. The enlarged inset shows the fifth wafer to be a #2 depth. The biting edge of the wafer keyway is approximately 3/4 the height of the primary keyway ward. No other wafers, deeper in the keyway, are visibly higher than the fifth wafer. If we drop our line of sight slightly, we could probably see the sixth wafer, which is exactly even with the top of the fifth wafer. The fifth cut of our unknown key is a #2 depth.

In illustration 13 the reader tool has been slid one position deeper into the keyway. As we can see in the illustration, the first, second, third, fourth, and fifth wafers, counting from the front of the keyway to the rear, have been lifted above the keyway. This allows a clear view of the sixth and last wafer. The enlarged inset shows the sixth wafer to be a #2 depth, as we suspected in the

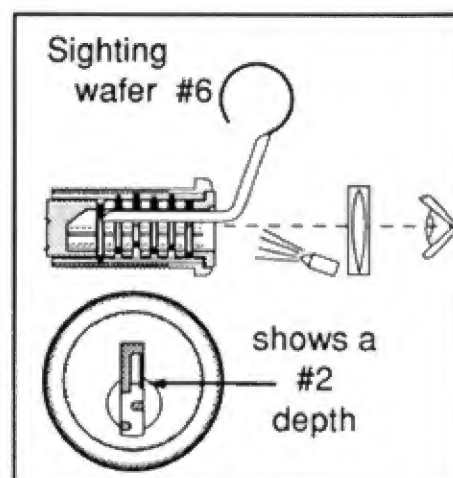


Illustration 13

previous step. The biting edge of the wafer keyway is approximately 3/4 the height of the primary keyway ward. There are no other wafers in the keyway past the sixth position. The sixth, or tip cut of our unknown key is a #2 depth.

We have read the wafers from the bow to the tip. This method eliminates the possibility of accidentally "picking" a wafer, or having one hang on the edge of the wafer compartment, giving us a false reading. We have determined the cuts to be 1-3-2-4-2-2 reading from the bow to the tip of the key. Generate a key, by whatever means you have, to try it in the cylinder. If you have read the wafers accurately, the key will work. Shallow cuts are easily impressed and filed in, to proper depth. Cuts made too deep will cause the key to "catch." Read the cylinder again, more carefully, to find the offending cut.

I use "Reading" to make at least 90% of the foreign auto keys that I am called to generate. Reading eliminates most of the disassembly and problems with incorrect or missing codes. It also makes replacement scalps and door cylinder caps necessary only in cases where the locks must be recombined. The cost to the customer, for a first key, is the same as he might be charged by another locksmith that disassembles, impressions, or removes a lock to search for a code. I make the same money, I just do the job much easier. Learn to read, it makes life as a locksmith much easier.

See *The National Locksmith Guide to Wafer Lock Reading* for more specific information on foreign automotive lock reading. It is a truly small investment, that will pay big dividends. Good Luck. §



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Mini- Section...

Key Control Cabinets

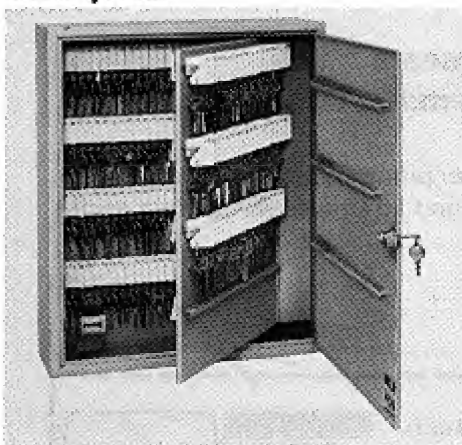
"In this section of the magazine, we take a look at several of the companies manufacturing key control products."

HPC, Inc.

HPC, Inc. has been a leader in key control for over 36 years and continues to expand its security storage line.

HPC's Keykab® systems provide both security and convenience for all your key control needs. Their key cabinets are considered to be the highest quality cabinet in the industry. HPC's single tag systems have a key capacity ranging from 8 to 730 keys and their two tag systems have a key capacity ranging from 30 to 500 keys.

HPC has several new key control products. The Horizontal and Vertical Key Cabinets are designed to be mounted in hard to fit places. HPC's Drawer File Key Rack is a 60 key capacity file that can fit into most desk and file drawers. The Hanging File is a 40 key capacity unit that is designed to be suspended on any hanging file folder system.



HPC also manufactures specialized security cabinets. The Medi-Kab™ offers a secure location for all your medicines and pharmaceuticals. HPC's Chem-Kab™ is a securely locking storage cabinet where dangerous chemicals can be stored safely.

Other new additions to HPC's security storage line include their new wall safes. The wall safes are available in two different sizes with a choice of standard tubular, combination, or a

Medeco® lock. The safes are constructed of heavy gauge steel. Plus, they have an innovative flush hinge (meaning that the surface of the safe is completely level with the wall).

HPC also manufactures a popular line of key boxes for many different purposes. The Key Drop Box offers the best security for temporary storage of keys. The Emergency Key Box is designed to house a restricted key at the immediate location. The bright red steel box has a key-locking hinged door with a glass window. When an emergency arises and access to a specific key is necessary, all you need to do is to break the glass with the attached hammer. HPC's Vehicle Key Keeper is a cylindrical unit that is similar to a small safe and can be mounted under the hood or body wall.

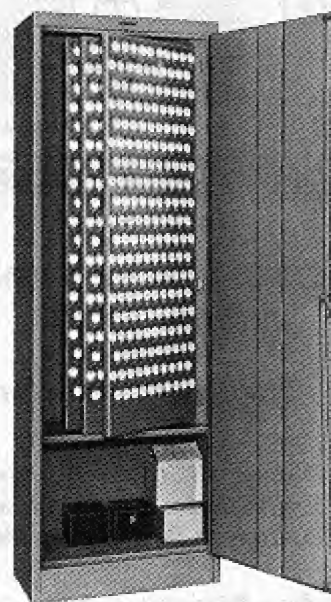
HPC's latest innovation is Smart-Kab™. Smart-Kab™ is a computer driven, independently run key control cabinet. It works with an access card, which is swiped along the key pad allowing or disallowing a user to retrieve a key through a key slot. This new cabinet has a key capacity of 50 keys and can be expanded to 100. Every time a key is removed, an audit trail prints inside the internal cavity of the machine. The audit trail can only be removed by authorized personnel. This breakthrough product is a revolutionary new idea that will be available in early spring of 1993.

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Lund Key Cabinets

A key cabinet designed for the automotive trade proved too much for thieves at Martin Chevrolet, Inc., a Warren, Ohio car dealer. The sturdy key cabinet resisted crowbars and protected the dealer's car keys inside.

The key cabinet was a standard



Lund Floor Cabinet modified to handle car keys and strengthened with three padlocks in reinforced hasps. The thieves used a tool similar to a crowbar to try to pry the door open, without success. The damaged cabinet was returned to Lund Equipment Co., Inc., in Bath, Ohio for replacement.

Lund Key Control Systems can be as small as the portable key tray for 56 keys which fits into a standard letter file drawer. Wall cabinet models hold from 30 to 1200 keys. Standard floor models hold 760 to 2280 keys. Six and eight drawer file cabinets can handle up to 2400 keys.

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Telkee

Telkee of Media, PA, manufactures several high security key cabinets as part of their line of key control systems. One model, which they have labeled the "Bulldog Key Safe," will hold 125 standard keys, 40 mogul cylinder keys,

Continued on page 106



by Dale Libby

Diabolical Super Steel

I was called to open a unit that three other companies had looked at then decided not to try the work."

I am not sure if "Super Steel" is a trade name or just a description that Mosler uses when talking about the alloy it uses on certain money chest doors. This stuff is diabolical! Not only is this material thick, but it gets harder to drill as you drill it.

This metal is "spot self hardening". What this means in English is that while you are drilling, you are creating heat. The heat generated by the drill bit is enough to treat the metal and make it hard. Very Hard! This was not my first confrontation with this material, but I hope that it will be my last. (Alas!)

The last time I was up against such a piece of steel I tried to drill a large hole very slowly. I used lubrication and a slow drill speed. Unfortunately, it was not slow enough and I only managed to penetrate about 1/4 inch before the steel became too hard to drill with regular drill bits. This time I would try something else.

I decided to drill a small hole, 1/8" in size. I used a slow speed and lots of cutting lubricant. It worked. I managed to cut an 1/8" hole, 1" deep without much difficulty. Then I hit the Mosler hardplate. I was expecting this. What I was not expecting will follow shortly.

Before drilling any safe, I scope out my options in advance. If drilling is needed, I want to make as few holes as possible in the unit. I try to make the hole in a position where it can be used for more than one purpose if need arises. On this unit it did.

Here is the situation. I was called (as the last resort of course) to open a unit that three other lock companies had looked at and had decided not to work on because of the major difficulty involved. The last company hired me to do the work and they would bill the customer. They also sent one of their technicians to help me. I appreciate this, for sometimes

- A:** This is the Mosler 302/402 MR Combination Lock.
B: Connecting flange between the combination lock bolt and 1" door locking bolt.
C: The 1" bolt goes through a large block of steel. It locks the door and is attached by the flange, which is secured by two screws to the end of lockbolt.
D: This represents the spool type of relocking trigger that Mosler uses in many of its applications. It is held in place by a large sheet metal cover.

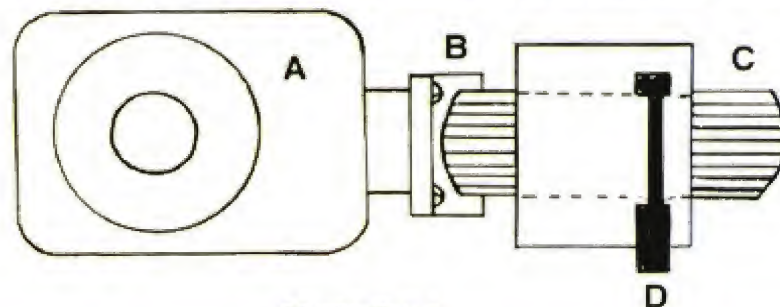


Illustration 1

two heads are better than one. This time it was quite helpful.

On a job of this magnitude the customer also appreciated that two persons were needed to do this. Never mind the cramped quarters, the lack of light and electrical outlets, and the other unfavorable working conditions, we eventually got the money chest open.

The cause of the lockout was known, but the exact problem was not. The cause was that someone who did not know how to service a Mosler Money Chest had changed the combination four days earlier. He supplied the information that the unit was a hand change model. I knew by touch that the lock was a 302-402MR (Manipulation Resistant) or a Mosler click lock. (My name, not Mosler's.) Hand change or key change really does not matter at this point.

The symptoms were simple. There was no pick up of the wheel pack by the drive wheel. There were two possible causes:

1. The drive cam fly was broken and not making contact with the wheel pack.
2. The back cover had come loose enough to separate the wheel pack

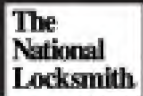
from the drive cam.

Knowing the nature of the Beast, I chose to drill my one hole at number 92 the appropriate distance from the center of the dial spindle after pulling the dial. I figured that I could overcome both problems with the one hole. Before going into the exact solving of the lockout, I had to get through the door and hardplate to get into the lock case itself.

After reaching the hardplate without any difficulty with an 1/8" bit, I changed to a sharp 1/4" drill. Imagine my surprise when I could only penetrate about 3/8" before my bit was burned up. To make a long arduous story short, I had to use my hardplate drill rig and Strongarm bits to drill the safe door "to reach" the hardplate.

It was actually harder to drill the Super Steel than it was to drill the hardplate. It "ate" about four drill bits before I reached the hardplate. The hardplate consumed two drill bits. The total time to reach and drill into the lock case was about 1-1/2 hours.

Murphy's law still prevails. My hole was about 1/8" off of being perfect. A slight angle on the drill rig at the start is magnified when



penetrating into a deep safe. I had to drill about half of the lever out along the bottom edge to view the wheel pack.

I used my scope to view the inside of the pack. The last wheel or third number of the combination moved a little when the spindle was turned, so I knew the problem was the back cover and not a broken fly. Still, however, I had problems.

I could not drill the lever fence off without creating more problems. I could not get the wheels into position to let the lever drop by probing. Special custom and exact drilling was needed.

I drilled a new gate in the three plastic wheels of the wheel pack. I moved the wheel pack into a position where I could force what remained of the fence and lever into the custom gates. This took another 1-1/2 hours to accomplish due to Mosler circumstances.

Next, I had to drill through the top of the lever (through my existing hole) into the back case and through it and carefully through the sheet metal over-cover. I was very careful at this point, for I knew that this outside metal cover held another relocking device in position on the opening bolt. If I set off that other relocker, I would have to drill another hole in this Monster Mosler in order to deactivate it. This, I did not want to do.

Making a metal hook to pull the lock cover back and the outside cover back took time and ingenuity. After trying to pull back both covers (outside and inside), I found that the outside cover did not fit close enough to the lock; I had to just pull back the lock cover without upsetting the outside cover.

I made a tool to do this. After inserting this tool, I then had to manipulate the lever into my false gates at the same time. This was much easier said than done. Everything just kept popping up, out, and away. Finally it opened. No one was more surprised and happy than I was, including the customer.

Total elapsed time on just the opening was just under six hours. Everything I did right just went wrong. Sometimes it just happens. Next month I will cover the extensive repair and retro-fitting I did of this door. Hope your openings are easy. Open and prosper. §



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Beginner's Corner

G.M. Auto Locks



by Eugene Gentry

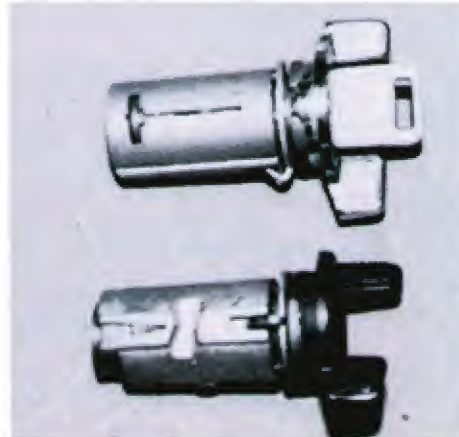
Working on automobile locks is a specialty field, which takes training and hard work. The locksmiths tell me, "You have to pay your dues," which means you have a lot of studying to do, along with working with a locksmith who will teach you auto work. The problem is, no one wants to teach the younger locksmith because, when trained, they leave to start their own business.

In a previous article we talked about removing an ignition lock from a GM steering column. Now that you have the lock in hand, we will talk about making a key by code and installing a new ignition lock if there is no code. We will also cover making keys for GM door and trunk locks.

The GM ignition lock is not made to be serviced as it cannot be taken apart. (See photograph 1). The lock on the right side is from a 1986 Chevrolet. Note the gap in the top side where the retaining screw holds the lock in place. The lock on the left is a pre-1979 lock that has a spring loaded retainer located at the rear which holds it in place.

The code book tells us that the cuts are 4-3-4-3-2-5 for this 1986 ignition lock. The depth and spacing book tells us that there are six spaces and five depths. The spacing from the bow is .107-.200-.293-.386-.479-.572. There is a .025 difference in each of the five depths. Number 1 cut is .248, two cut is .223, three cut is .198, four cut is .173, five cut is .148. This is simplified by using a code cutter with a depth and spacing card.

You can cut a code key on you Foley Belsaw machine by using a pre cut spacing key to determine the spacing along with the depth micrometer to cut the depths. If your



1. G.M. auto ignition locks.



2. G.M. door locks.

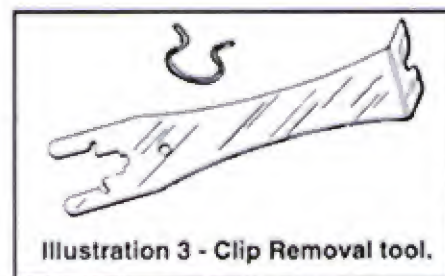


Illustration 3 - Clip Removal tool.

machine is equipped with a spacing micrometer, you will adjust this at the proper spacing by setting the spacing micrometer at 0 at the bow, move it to .107 for the first cut, then move on to the other cuts.

After the key is made by code you can then install the lock back in the steering column.

If there is no code you will have to install a new ignition lock. Many locksmiths carry extra GM ignition locks in their trunks so that if they

have to change a lock in the field they can take care of the customer.

The door lock on a GM auto can be serviced. It can be removed and taken apart to change the wafers. A new key can be made if the code is on the lock or it can be decoded and a new key made on the code machine or clipper. (See photograph 2.).

In order to remove the door lock, the door panel has to be taken off. Proceed by taking out the screws to remove the arm rest. Door panel removals vary from car to car. Some have hidden screws under plastic plugs and some have screws that hold the panel on behind the screws you have already taken out. Remove the door handle and window handle by using a clip removal tool designed for this purpose. (See illustration 3.)

Now, use a good clip removal tool to remove the trim pads. This type of tool should be in every tool box as it prevents tearing out the nylon retainer clips. (See photograph 4.) You



4. Trim pad removal tool

have not done a professional job if you tear the clips out of the cardboard on the panel. The door panel should be removed completely to give you good access to the rear of the lock.

Disconnect the linkage from the pawl, then remove the "U" shaped clip from the rear of the lock. Pull the lock out of its hole.

To begin service on this lock, the cap has to be removed. Use a professional tool, a decapper, to do a professional job. (See illustration 5.)

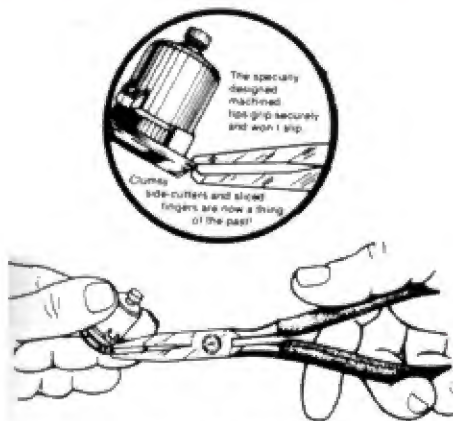
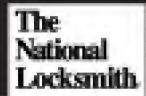


Illustration 5

Used with care, you may be able to salvage the cap to use again, otherwise you will need to put a new cap on. As you are taking the cap off, use a finger to keep the dust cover and two tiny springs behind it from flying off. Put these to one side so you don't lose them. Remove the retaining clip at the rear of the lock and remove the cam.

Pull the plug out of the shell. Now hold the side bar in with your thumb and pick the wafers until the side bar moves inward to an unlocked position. At this time, either read the wafers to obtain the cut depths, or use a GM wafer decoder. (See illustration 6.) You find the cuts are 3-2-4-3-2-3. You can now make your key on the code machine or key clipper.

GM Tumbler Decoder Gauges



Illustration 6

If you wish to make a key change, remove the retainer on the top that covers the wafers. Use a tweezers to pull each wafer from the plug. Make your change by placing the wafers in the order you want. (See photograph 7.)



7. Wafers and springs out of G.M. door lock.

Continued on page 107

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The Lighter Side

A Funny Thing Happened On The Way To The Seminar



by Sara Probasco

"What are you doing?" Don asked, looking up from his morning paper.

"Trying to decide what to write about, this month," I replied. "Tell me some funny stuff you've done lately."

"I don't know of anything." He hid behind the news.

"Sure you do. You're always sharing funny experiences when you get with other locksmiths. Tell me something I haven't heard."

"Why don't you draw on your own experiences?"

"Like what?"

"Like some of the things that go on at your seminars, for example."

"I can't think of anything funny that's happened."

Don's eyes held a twinkle that told me he was about to remind me of some things I'd rather forget. Laying his paper aside, he leaned forward. "What about the night you got lost in the hotel?" he asked, grinning.

"There was nothing funny about that," I retorted. My mind flew back to the evening in question.

An old school chum had met me at the airport and driven me to the convention site. After checking in, we decided to find a place at the hotel where we could sit quietly and chat for a while.

The hotel had been built in three stages, I was later told: first, a two story rectangular building; second, a three-story building parallel to the first; third, a connecting link across one end, creating a modified U-shaped structure. Because of a sloping terrain, the third floor of the second building was on a level with the second floor of the first, so if you walked straight across from 2, you would find yourself on three. This

created a degree of confusion, where room numbers were concerned.

As you may imagine, a number of jogs and semi-dead ends existed where the buildings had been joined. During my stay there, I managed to traverse stairs that led to blank walls, stairs that went down a flight and back up for no apparent reason, and an elevator that led to only one room. All in all, I had decided the plans were drawn by a committee, the members of which were not on friendly terms.

Stopping at the registration desk, we asked directions to the lounge and were given a printed map of the building's layout. (That in itself should have warned us we were faced with an interesting evening.)

"You just go down this corridor and keep bearing to the left," the young woman instructed, pointing.

Seemed simple enough.

"I can't think of anything funny." Don's eyes held a twinkle that told me he was about to remind me of some things I'd rather forget.

Following her instructions with map in hand, we struck out confidently in the direction indicated. Within a few minutes, we found ourselves back at the registration desk. Undaunted, we ventured forth again, this time veering a bit more to the right as we circled the central elevator. We wound up at the coffee shop behind the registration area. It was closed.

After two more tries, we noticed that along the wall leading back to registration hung a series of large, framed maps depicting progressively vaster areas. The first was a map of the city. The next was of the state, then the United States, then the world, then the universe.

As we traversed that corridor for the fourth time, we noticed an elderly couple who had been scrutinizing the map of the universe throughout our multiple orbitings.

"Look! There it is," the woman cried jubilantly to the man as we passed. She was pointing to a remote

star at the edge of the design.

My companion whispered, "And we thought WE had problems. They must REALLY be lost!"

My thoughts were jolted back to the present by Don's continuing comments.

"...Or what about the time you used a trash can for a podium?" he said.

"That wasn't funny; that was improvisation," I replied.

"Well, there was the time your flight was overbooked out of Dallas, and you were offered \$200 to take a later flight. You could write about how you turned down the offer because you didn't want to keep your contact waiting at the other end. Remember? That was the time they held your plane for that top-ten rock group who had booked the entire first class section,"— Don was chortling by now—"and the 'later flight' arrived at

your destination before yours did."

"I remember," I said. "But I'm not laughing."

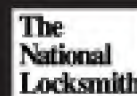
I watched him wipe tears from his eyes and strive to contain his mirth. Then I quietly left the table and returned to my word processor.

"Hey, I'm sorry. I didn't intend to hit a sore spot with you. Don't go away mad," he called after me, but he was still chuckling.

"I'm not mad. I just thought of something funny to write about," I replied. "Remember the time you flew to Minnesota and got snowed in at Chicago? How you spent an exhausting night trying to sleep at O'Hare terminal? And then, when you finally reached your destination the next morning, your briefcase with all your notes had gone somewhere else, and you had to 'wing it'?"

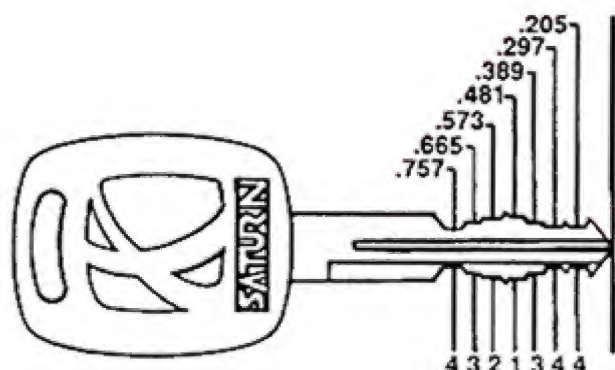
"I fail to see the humor," Don said.

"My point exactly. A person involved rarely does, unless he's telling the tale on himself." §



GM-Saturn

R000-999 & T000-394



DEPTHS

1. 0.338
2. 0.313
3. 0.288
4. 0.263

KEYWAYS

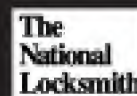


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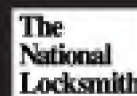
Code Machines:

1200 CM No. XF207

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01 4234244	51 2224424	01 2311223	51 2344324	01 1112313
02 2331213	52 1224234	02 4311313	52 2322344	02 1332424
03 3343213	53 1222313	03 3312244	53 3234213	03 1321213
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07 2313344	57 3324433	07 3332233	57 3433123	07 4244233
08 2133244	58 1243244	08 2423123	58 4434313	08 2331233
09 2432124	59 3311123	09 1331313	59 2434313	09 4331244
10 4323244	60 1332244	10 4244334	60 2213213	10 4321344
11 1133424	61 3133233	11 1224424	61 2124433	11 1124424
12 4212213	62 2324313	12 4213213	62 4313124	12 2313424
13 2424244	63 3242244	13 3423244	63 4222434	13 4342423
14 2311344	64 2234324	14 3121324	64 2323213	14 3423133
15 3233323	65 4313423	15 3442123	65 3243433	15 4342124
16 2324344	66 3442133	16 4433424	66 2423233	16 2211244
17 4421223	67 4312244	17 2244324	67 3242233	17 2132424
18 4234344	68 2444313	18 1321344	68 3133423	18 3323124
19 2234213	69 1322313	19 3313324	69 2122323	19 3124213
20 3312213	70 4211313	20 4431244	70 2344244	20 1244213
21 3334313	71 2112424	21 2131233	71 4313334	21 4243344
22 2233134	72 4244424	22 2123424	72 3122344	22 2422134
23 4224344	73 3343423	23 2423323	73 4223123	23 3113134
24 3422423	74 2424313	24 2112313	74 2232424	24 2444213
25 2421313	75 4223433	25 4311334	75 3112123	25 2313323
26 2111313	76 2323423	26 3244213	76 2312334	26 3342124
27 2432434	77 2212313	27 2112233	77 1321313	27 3132424
28 2444324	78 2123344	28 3432133	78 1124324	28 1343244
29 2221313	79 3112323	29 4343323	79 4213434	29 4342433
30 4233313	80 4334423	30 3111334	80 3134324	30 3111324
31 4224324	81 4212423	31 3313133	81 2322433	31 3122433
32 4231233	82 4233344	32 2133424	82 4211344	32 2313313
33 4332424	83 1313313	33 1313213	83 3234234	33 2442213
34 3443124	84 1131124	34 3131344	84 3124433	34 2342123
35 4234323	85 4213123	35 3312423	85 3242344	35 3211313
36 4443234	86 2231223	36 1311324	86 2422424	36 2343344
37 1342434	87 1334433	37 2444234	87 3132324	37 4431134
38 3233213	88 3133124	38 4244313	88 1211313	38 4442313
39 3331233	89 2424433	39 4432133	89 2342323	39 4232324
40 2434233	90 1243213	40 3331344	90 4433434	40 4331233
41 3334223	91 3224244	41 3423234	91 2443423	41 2443123
42 2113124	92 1244234	42 2242324	92 4244344	42 4312123
43 3134313	93 2223433	43 1244423	93 1321324	43 4431213
44 3123324	94 3431124	44 4442234	94 3122334	44 3131124
45 4343234	95 1223213	45 1213434	95 2343244	45 1334213
46 1331344	96 2443133	46 1333123	96 3122234	46 4243244
47 1123244	97 3233123	47 1324233	97 4213234	47 4343213
48 3112233	98 4423223	48 3222423	98 3324213	48 1313223
49 3221244	99 4224244	49 4422244	99 2324434	49 3334213

Continued on page 88

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Continued from page 95

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Keyblanks:

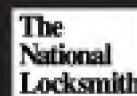
Ilco P1100
Curtis B76
Silca GM25R

Code Machines:

1200 CM No. XF207

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51 1131344	01 2423133	51 1333134	01 4443213	51 1112423
52 3313344	02 3132223	52 1243133	02 1212133	52 3331124
53 2112434	03 4424223	53 4311213	03 1343134	53 3344244
54 1132344	04 1213323	54 3431313	04 2322233	54 3444244
55 1223134	05 1311133	55 4243424	05 2423334	55 4433123
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57 2231244	07 3242424	57 4321334	07 3123123	57 2442424
58 4442123	08 3132133	58 2311124	08 4334223	58 2422324
59 3321344	09 4322213	59 3334324	09 1232134	59 4332344
60 2443244	10 4242234	60 1113213	10 2431123	60 2431213
61 3324424	11 2312223	61 2244313	11 4224223	61 4333434
62 1121133	12 3223424	62 2422124	12 3131244	62 3122133
63 4323213	13 3434234	63 4421133	13 1243313	63 1123123
64 3133213	14 1244244	64 1332123	14 2424424	64 2242344
65 1232423	15 4242244	65 2342133	15 4234313	65 4432213
66 3133313	16 4431324	66 1323134	16 4431344	66 3313213
67 1133233	17 2234424	67 1134244	17 1244344	67 2312134
68 4422344	18 3322424	68 2243213	18 3433133	68 1342324
69 1313344	19 4422123	69 3432344	19 1323124	69 3111344
70 3233423	20 1311313	70 3313313	20 2424213	70 4231344
71 1134213	21 4223223	71 4234223	21 1343344	71 1312313
72 4331124	22 3332123	72 1233124	22 2133213	72 2431334
73 4232244	23 4233423	73 4434424	23 3424223	73 1213213
74 2313213	24 3322433	74 3343313	24 2224323	74 4212433
75 3131313	25 1124344	75 1234244	25 4232124	75 3422433
76 4233134	26 3113213	76 3321323	26 3222313	76 3213313
77 4212134	27 4313313	77 3121244	27 1132233	77 2231313
78 1234424	28 2432223	78 2343133	28 1324223	78 4211234
79 2421344	29 2332424	79 3131324	29 2432424	79 2231213
80 4424213	30 2424323	80 3432233	30 2343123	80 2113213
81 2331334	31 3424324	81 3331244	31 2422313	81 3431134
82 4242213	32 4223134	82 2331133	32 1313233	82 1311344
83 2113133	33 2333133	83 2112323	33 2131244	83 3424233
84 3424213	34 2244344	84 2221244	34 1242244	84 4423124
85 3432244	35 2232344	85 1222323	35 3422123	85 1124244
86 4431313	36 3231334	86 4212123	36 2131324	86 3331313
87 1311334	37 2323133	87 3331334	37 3231213	87 3431344
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89 4431124	39 4232223	89 2242434	39 2343213	89 3112334
90 1242313	40 4434213	90 1122424	40 1311124	90 3421123
91 4432244	41 2442133	91 3342434	41 4423233	91 2231133
92 4344344	42 3242334	92 4213324	42 1212423	92 4323434
93 1324313	43 4442423	93 2134313	43 3422324	93 4231134
94 4424433	44 4432324	94 4434244	44 1212313	94 3431324
95 3343244	45 3311234	95 2233123	45 3213323	95 2132123
96 3134424	46 3211244	96 3344323	46 4243313	96 2342313
97 4312213	47 2344223	97 4312423	47 3133344	97 1223123
98 3244433	48 3123213	98 2113313	48 3113233	98 1231244
99 4221323	49 1113313	99 2242213	49 2311133	99 2244213

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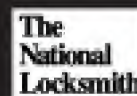
Keyblanks:

Ilco P1100
Curtis B76
Silca GM25R

Code Machines:

1200 CM No. XF207

0500	0550	0600	0650	0700
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01 4324244	51 2333423	01 4243334	51 2342233	01 3331324
02 4324323	52 3213423	02 2122313	52 3342324	02 4233234
03 4232233	53 2331313	03 2334213	53 1232434	03 1321134
04 2331124	54 1344244	04 2342313	54 1343123	04 4234434
05 4321313	55 3243133	05 2432344	55 4333423	05 2343223
06 2111244	56 3132313	06 3113433	56 1343433	06 1313334
07 3132244	57 2213124	07 4423133	57 4321244	07 3134244
08 3112213	58 3121313	08 3121334	58 3431213	08 3324323
09 4421233	59 3113423	09 3134334	59 2313233	09 1224323
10 3321244	60 1124213	10 4322244	60 4244433	10 3331213
11 1233244	61 4231124	11 2133123	61 2421323	11 2433323
12 3242323	62 1132123	12 3113313	62 4313133	12 1242234
13 2343423	63 1244313	13 2444244	63 4322433	13 2334424
14 1332313	64 2234313	14 4424244	64 1343424	14 4423213
15 3434433	65 3113344	15 1123424	65 3212323	15 1342344
16 4324233	66 3231234	16 3121223	66 3223313	16 3131233
17 1243234	67 1323213	17 2423313	67 2344433	17 2434213
18 4233213	68 2244434	18 2343313	68 4343123	18 2313434
19 1232123	69 3422244	19 2333434	69 1231124	19 3111244
20 2311334	70 2123134	20 1324424	70 3434244	20 1344213
21 3234313	71 3232124	21 4442213	71 2312313	21 3423124
22 1242213	72 2223134	22 2244234	72 1231133	22 3124334
23 4312344	73 1312213	23 2432244	73 4432234	23 1211133
24 3432223	74 1131213	24 2113424	74 4442244	24 4221344
25 1322423	75 3123433	25 4222423	75 3222344	25 1131324
26 1312344	76 4223244	26 2433313	76 2223313	26 2442233
27 2434434	77 2133134	27 1344313	77 1313323	27 2212424
28 2231323	78 2321223	28 4242344	78 4422433	28 3313123
29 2342434	79 4323323	29 2433244	79 4442323	29 3422213
30 3313244	80 4311323	30 1213124	80 2312124	30 3444324
31 2334234	81 2212244	31 1233213	81 1234233	31 3224213
32 4211244	82 3212244	32 1223313	82 3433313	32 1242324
33 1122313	83 2123124	33 4422424	83 2231234	33 2234233
34 1313424	84 3124344	34 1124233	84 4232424	34 1244323
35 1234313	85 1124313	35 3242313	85 4231313	35 3421134
36 3342423	86 4431334	36 3421233	86 2112244	36 4343434
37 3243423	87 4443124	37 4334324	87 3444313	37 2432334
38 4423313	88 3434323	38 4433344	88 3231123	38 2421244
39 2242234	89 2123313	39 4211334	89 1312334	39 2124423
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41 1132133	91 3344344	41 4213423	91 2323244	41 3332244
42 2431323	92 2332123	42 2223213	92 1342123	42 3234423
43 1233313	93 3224424	43 3324313	93 2134324	43 2334244
44 1334234	94 4331133	44 4222313	94 2321133	44 4313244
45 3432323	95 3324234	45 2124233	95 2131123	45 4221213
46 4244244	96 3324344	46 3444213	96 1342213	46 1134344
47 4311234	97 4343244	47 2434423	97 4222323	47 4242313
48 2223423	98 3244234	48 3423213	98 1212344	48 2243313
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R000-999 GM-SATURN

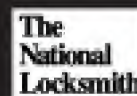
Keyblanks:

Ilco P1100
Curtis B76
Silca GM25R

Code Machines:

1200 CM No. XF207

0750	0800	0850	0900	0950
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51 3132344	01 3242123	51 3332423	01 2313134	51 2224213
52 3124234	02 1322344	52 2233313	02 4342213	52 3112244
53 2433123	03 3213124	53 1324323	03 2224234	53 2242133
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55 3421244	05 2321234	55 1342313	05 3243234	55 4312233
56 4344323	06 3133223	56 1313134	06 3123244	56 3343124
57 2421123	07 2134424	57 4231334	07 2242244	57 3424434
58 1213313	08 1211233	58 1223244	08 1121244	58 1224313
59 3432434	09 2213344	59 2243423	09 4332313	59 2313123
60 2422213	10 4424234	60 4321124	10 3313233	60 1311213
61 2224244	11 2421134	61 3242213	11 2124313	61 2122423
62 1123313	12 3123313	62 1244223	12 4421313	62 2312344
63 2242313	13 2332244	63 1224213	13 2432313	63 3434213
64 1243223	14 3112134	64 4342344	14 3231244	64 3434423
65 2433213	15 3124313	65 2434323	15 1313124	65 4223234
66 3234244	16 3222323	66 2423424	16 2223123	66 2223213
67 1242133	17 1231313	67 4221223	17 1331134	67 4312134
68 2332134	18 1313433	68 3311323	18 3323423	68 3443244
69 2321123	19 2311313	69 3344423	19 4443244	69 4334233
70 3442324	20 2442313	70 4443313	20 3232424	70 3323244
71 1213244	21 3123344	71 3233134	21 1323434	71 4322124
72 1334324	22 2344313	72 2422234	22 2331244	72 2311234
73 1333423	23 3132124	73 1233424	23 3232313	73 3421213
74 2434244	24 4344213	74 2312244	24 1312323	74 4344313
75 2124244	25 2422244	75 4323234	25 3122323	75 3232133
76 2421234	26 3342133	76 1132424	26 1342244	76 2224344
77 2132134	27 2433134	77 3424344	27 3131213	77 2311213
78 1134324	28 3242133	78 2342424	28 3224233	78 4333244
79 2223244	29 4244213	79 4323123	29 2232123	79 4334213
80 2113323	30 3442424	80 4443133	30 4242334	80 4422213
81 4431234	31 4424313	81 4242124	31 2243234	81 1234324
82 4242133	32 1113133	82 4432344	32 4322313	82 1331123
83 2321344	33 3243313	83 3343223	33 3342233	83 4443424
84 4243323	34 1133123	84 4233323	34 1313244	84 3243223
85 3344233	35 2121244	85 3324244	35 1233433	85 4343223
86 1324244	36 4223313	86 2342244	36 3321234	86 2134213
87 3133434	37 3121213	87 4421244	37 4423344	87 2344424
88 4322424	38 3311244	88 3243244	38 2334323	88 3242434
89 1133313	39 1234344	89 4432423	39 2112133	89 1312133
90 2131344	40 2432233	90 1331334	40 1324213	90 4231324
91 4421344	41 2321313	91 1331213	41 3421323	91 1113424
92 3124244	42 4321324	92 2432133	42 4321134	92 4223213
93 3423423	43 2344233	93 1334313	43 4433134	93 2124223
94 1344323	44 1133244	94 3343134	44 3244244	94 1333213
95 4213244	45 3344313	95 4312334	45 4242323	95 2442434
96 4423424	46 4221244	96 4323313	46 1231344	96 3221313
97 3122213	47 4343424	97 2243323	47 1232313	97 4343133
98 3113124	48 3111213	98 4243233	48 3223213	98 4312433
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T000-394 GM-SATURN

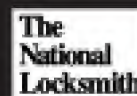
Keyblanks:

Ilco P1100
Curtis B76
Silca GM25R

Code Machines:

1200 CM No. XF207

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01 3231344	51 4222134	01 4321234	51 1342423	01 2124213
02 3433213	52 4224433	02 2224313	52 3321133	02 2211324
03 3244324	53 4422313	03 2133434	53 4321223	03 3313434
04 4331313	54 4212344	04 1231213	54 4323134	04 2324424
05 4343313	55 2433424	05 3444233	55 1242124	05 4342334
06 4344233	56 4213334	06 4421323	56 3342334	06 2132433
07 2312324	57 4322233	07 1133213	57 2333213	07 2442344
08 4311134	58 3321123	08 2443234	58 3123134	08 2434344
09 1123133	59 2232134	09 1342234	59 3213133	09 2443313
10 3112313	60 4224233	10 3131223	60 4334244	10 2243244
11 2433434	61 3442433	11 2431244	61 4211134	11 3312233
12 1121313	62 4434323	12 3433344	62 3422133	12 4233433
13 3344213	63 2213313	13 1342133	63 4322344	13 1134313
14 2431344	64 2321244	14 3131133	64 3243213	14 3424244
15 4211123	65 3223133	15 4232344	65 3213233	15 2233233
16 4232313	66 4331344	16 2424223	66 1232344	16 2231344
17 3243123	67 4342324	17 3332313	67 2233423	17 2421213
18 4333123	68 1224344	18 3442313	68 2134233	18 4434234
19 3134433	69 2244244	19 3234434	69 4231244	19 2132313
20 3423323	70 4232434	20 1131234	70 3122423	20 4323344
21 2212434	71 3442334	21 3112344	71 3443423	21 2442244
22 4324223	72 3343233	22 4213313	72 2243124	22 3444344
23 3424424	73 2113344	23 4233244	73 1234213	23 3233344
24 4342233	74 4222344	24 4333134	74 3442344	24 1343234
25 2322424	75 3232244	25 1242344	75 3132233	25 4433233
26 2332323	76 1243434	26 4324213	76 2431233	26 2332313
27 3124323	77 3213344	27 4313213	77 2323124	27 1332134
28 4423244	78 2243133	28 4234213	78 2312423	28 3224323
29 1113123	79 2343233	29 4422133	79 2442123	29 4442223
30 4242424	80 3223244	30 4211324	80 4421123	30 1213133
31 1134223	81 2133313	31 1133433	81 3124424	31 4212234
32 2242423	82 4232134	32 4223344	82 3213213	32 2422344
33 3223434	83 3231323	33 4212313	83 4331323	33 4211213
34 3224344	84 1243423	34 2121133	84 1322434	34 3423344
35 4342244	85 3424313	35 4321213	85 2442334	35 4242434
36 1122323	86 4233223	36 4423434	86 4224424	36 3431334
37 1242434	87 3423313	37 2122244	87 2243223	37 2423433
38 3334344	88 3311134	38 1132313	88 4243134	38 4344244
39 3233313	89 2233244	39 3443134	89 4231213	39 4312313
40 2232313	90 1231233	40 4223424	90 1242424	40 2324213
41 2242123	91 1323244	41 1211344	91 2333123	41 1234223
42 2443213	92 3212424	42 3432124	92 3334424	42 4244223
43 3442213	93 3312134	43 4213223	93 3423223	43 2423344
44 1213424	94 3344223	44 2231123	94 3123424	44 4244323
45 4422234	95 4332134	45 3432424	95 1223423	45 4243123
46 2442223	96 3212313	46 1131223	96 2443434	46 1231223
47 3323213	97 2213434	47 1312124	97 3431244	47 4433213
48 1333233	98 2134244	48 4322324	98 3123233	48 3443213
49 1344233	99 3313423	49 4311123	99 2424344	49 1332433



T000-394 GM-SATURN

Keyblanks:

Ilco P1100
Curtis B76
Silca GM25R

Code Machines:

1200 CM No. XF207

0250	0300	0350
50 4333213	00 3313223	50 1134234
51 3312123	01 4423324	51 1312234
52 3122313	02 3113324	52 1131244
53 4313223	03 1131313	53 4442133
54 3434313	04 2131313	54 3133323
55 3432313	05 3134344	55 4313323
56 2443344	06 3121344	56 3212133
57 1231324	07 2324233	57 4221313
58 3112423	08 2233213	58 3244423
59 2312234	09 4344423	59 3121234
60 3323313	10 4213134	60 4323423
61 3424334	11 4222124	61 1323423
62 1243123	12 3122123	62 3423434
63 3113334	13 3321313	63 3121123
64 1133134	14 1223233	64 4331213
65 3244313	15 3322133	65 3443234
66 4224313	16 4213344	66 2213133
67 3132433	17 1242223	67 4424424
68 3433423	18 4243213	68 1123213
69 3443313	19 1334424	69 3331134
70 2424233	20 4221134	70 2234244
71 3134213	21 3133244	71 3111234
72 1312244	22 2334313	72 2321334
73 4212324	23 4424344	73 4313344
74 4232213	24 2432323	74 3342213
75 3231313	25 4334313	75 4442344
76 4312324	26 1321244	76 2312213
77 3322344	27 3322313	77 4234234
78 4324434	28 4224213	78 3342344
79 1344423	29 3321213	79 3421344
80 3334244	30 3231133	80 2124324
81 4422334	31 2132344	81 2211313
82 3422233	32 3312434	82 1331233
83 2321213	33 2422433	83 4424324
84 1221233	34 3323134	84 2243434
85 4342134	35 3443434	85 4233124
86 2123213	36 1331244	86 4344223
87 2311244	37 1233133	87 3121134
88 4311244	38 3421313	88 1323313
89 1343213	39 1311234	89 2432213
90 3342313	40 4313234	90 3132213
91 4324344	41 3311213	91 3234323
92 4243434	42 3311313	92 1224244
93 4313434	43 2431134	93 4223323
94 2342344	44 3442244	94 2213424
95 1221313	45 2131213	95
96 2423244	46 3422344	96
97 3113244	47 3122244	97
98 1321234	48 3111313	98
99 4432124	49 2244423	99

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Letters

Continued from page 6

that are in need of your boundless talent, knowledge and energy. I do not believe that the industry needs yet another magazine and association. I believe they will only splinter and dilute the available time and talent.

The politics of local and national associations often bothers me. Yet, if I am intellectually honest, I must admit that we are all political animals, and that each of us brings our own personal problems and agendas to group efforts. This is a deep truth of human nature. It is not peculiar to trade associations. Despite those limitations, we can do really fine and exciting things together. The alternatives to working together are isolation and divisiveness.

Please, Bill, don't reinvent the wheel. Think it through again. God bless.

Jerome V. Andrews, CML
Southington, CT

Technitips

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wheel, it can be bent to a 90 degree angle, and used much like an off-set screwdriver or socket wrench. In this case the special repair was better than the original tool.

Larry Wright
South Carolina

How many Kwikset "spinners" have you had calls on? Here's a Technitip for a way to open the lock easily, impress your customer, and even save money. It is a method of opening the lock, that does not destroy the cylinder or housing.

In the past, I used to either drill out the plug and pull the bolt back with a screwdriver, or drill for the mounting screws to disassemble the lock from the door and draw the bolt back with a screwdriver. Either way, it meant replacing the deadbolt.

After a little study, I realized that the only thing holding the plug in the cylinder, after turning the plug with a key, was the clip at the back of the cylinder. By taking the customers key and making a half turn on the cylinder, then breaking the key in the lock, you are eliminating most of what is holding the plug in the cylinder. Hold the plug, and drill a small hole into the blade of the broken key, in the plug. This pilot hole should be the correct size to



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accommodate your plug puller screw. Thread the plug puller into the key and plug, and extract the plug. The clip that hold the plug will give up with very little pressure. The lock can be opened through the open cylinder hole. All that remains is to combine and replace the damaged plug. The lock chassis and cylinder will not be damaged.

I have used this Tip, and feel that it is better, or at least less expensive for the customer, than any other solutions to this problem that I have seen.

Van Domschke
California

My Technitip is on impressioning keys to warded type locks. I do not like to use a candle to blacken the key. What I use is a black Marks-A-Lot marker. With this, I do not get a lot of false marks as the key is inserted and removed from the lock. The marks are also much easier to see. When the key is complete, wire brush the blade to remove the marker.

James Mortimer
Iowa

Watchguard

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to be easily vertically aligned to the handle. Additionally, the steel "beak" can be adjusted in and out with a set screw on the handle body for easy horizontal alignment.

Some of other products provided by Watchguard are a bolt for casement and awning windows, a pushlock for sliding aluminum windows and keyed and non-keyed sashlocks. Incidentally, as an indication of Watchguard's quality, the company does not have a "Returns" department. That should say volumes about the care in manufacture taken by the company's people.

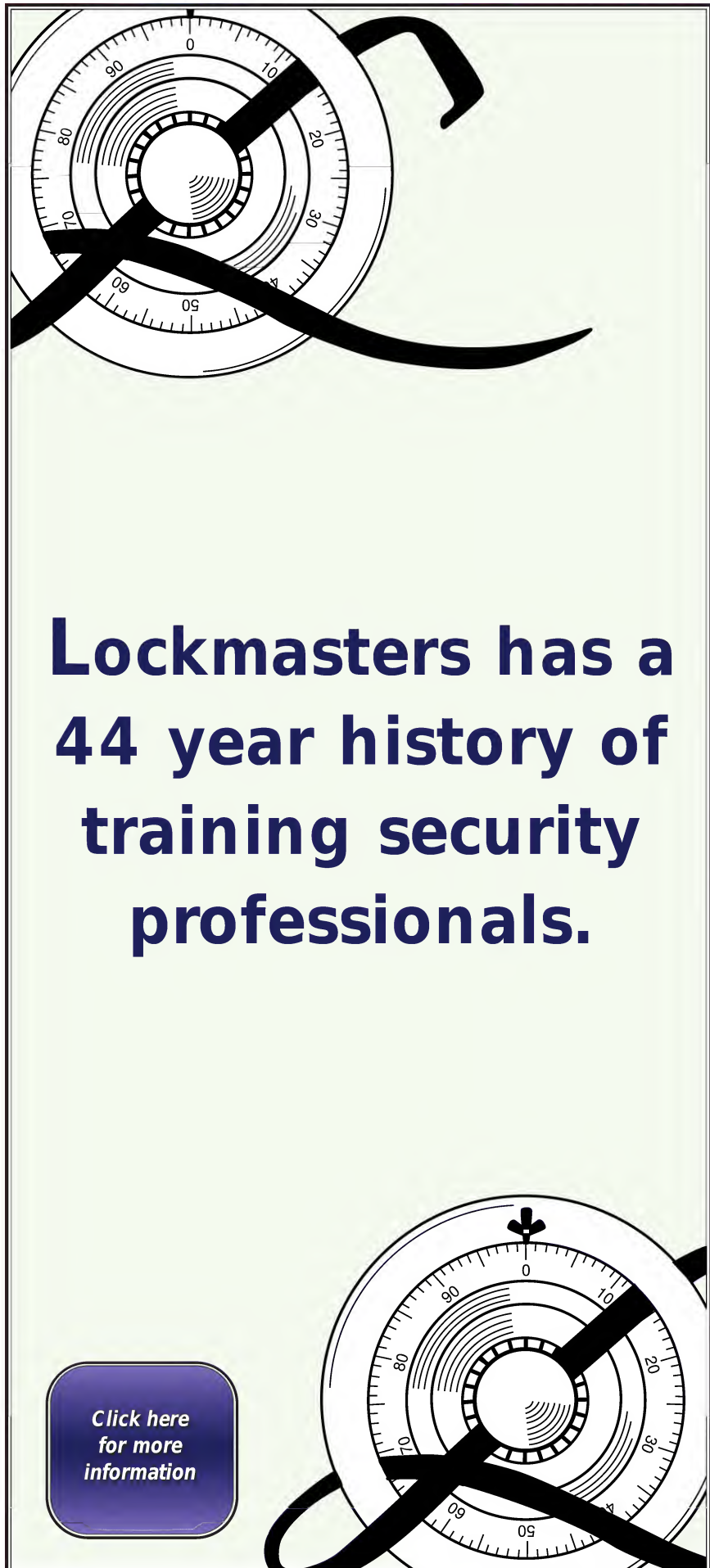
Hopefully this article should shed a little more light onto the locking of sliding patio doors. Glass patio doors must be treated with respect. Remember: "One nick is as good as a brick."

For more information contact: Watchguard Inc., 1001 Club Lakes Parkway, Lawrenceville, GA 30174, (404) 279-1021. §

HPC Tools

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to be opened is the load. One end of the tool acts as the hinge, or wheel, and goes against a box adjacent to the one to be opened. A hook device goes into



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the hole where the renter's plug was on the door to be pulled. It attaches to the inside of the door. The "handle" end of the puller goes against the adjacent box on the other side of the door to be pulled.

A knurled knob on a threaded rod is turned to move this end of the tool outward. As it is moved out with the other end against the other door the center is lifted just as a load in a wheel barrow would be lifted when the handles are lifted. The load in this case is the door to be pulled. As the knurled knob is turned the door is pulled open. The door itself is not damaged in any way. The bolt on the lock is bent back or the screws that attach the lock to the door are defeated. In the majority of cases the door should only have to be pulled enough to be able to push the lock bolt back with something. In most instances it should not be necessary to completely break the lock bolt off or strip out the screws completely. After the HPC DP-7B safe deposit door puller is used replace the lock and the job is done.

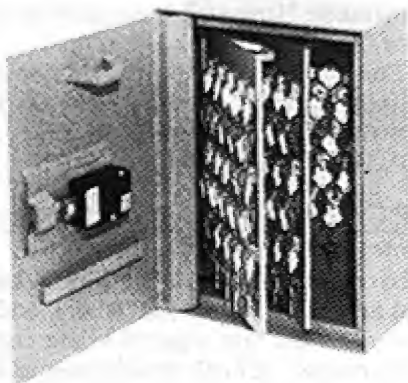
Though these three tools are not often publicized, they are definitely tools that would benefit an experienced locksmith. They do the job they are designed to do in a very efficient way to help you do your job in a more profitable manner. §

Mini-Section

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or 12 prison keys.

The cabinet is constructed of 10 gauge steel and has a strategically placed hardplate to prevent the bolt from being drilled out. The door is 1/4" plate steel with a 1/2" recess to prevent prying. A dogging plate hampers any attempt to drill out the piano-type hinge. Additionally, a special door stopper prevents the door from being driven into the cabinet.

The Bulldog cabinet features a UL



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listed combination locks with a key change feature. A special hardplate behind the lock prevents drilling. Attempts at thermal or mechanical entry are made difficult by a hidden relocking pin on the lock. This lock has over 1,000,000 possible combinations and cannot be X-rayed.

The dimensions of the Bulldog cabinet are 12" wide by 16-7/16" high by 6-3/8" deep, and the weight is approximately 57 pounds. The unit comes in a gray neutra-tone finish and is furnished with all necessary accessories. The Bulldog cabinet is also available with four adjustable shelves instead of key panels.

Other high security key cabinets offered by Telkee include Aristocrat cabinets (150-450 key capacity) and Regent cabinets (25-125 key capacity) supplied with either standard combination locks or Simplex pushbutton locks.

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The Beginner's Corner

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After the servicing or when the key is made, reassemble the lock. Put the plug in the sleeve and replace cam with retaining clip. Use care to replace the two tiny springs on the face of the lock with the dust cover on top of them. Hold them down while you set the face plate, then place lock face down on a bench and bend over the four legs on the new face plate to hold it on.

Service to the trunk lock is similar to the door lock. To remove the lock from the trunk deck, you first have to drill out, from inside, a pop rivet that holds the retaining clip in place. Remove the retaining clip at the rear of the lock, inside the trunk lid. When you pull the lock out of the hole the tailpiece will come out with it. Remove the retainer and tailpiece and put them to one side. Peel off the cap, and service the lock. If you have made a key for the door lock, then that same key will work in the trunk lock.

Finally, as you study the auto lock manuals, you will find that you can make a key by progression for the door and trunk by using the glove box lock, which only has four wafers. This is knowledge that will help your auto lock work. You will also find that on the newer cars you will have to contend with air bags, electric locks, and the VATS system.

So you can see there is a lot of studying to do. §

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